Table23.4: Status of Onion cultivation, before and after war.

Province	District	Hectares in 1978	Hectares in 1996	% increase / decrease	Average yield (Kg / ha)	Average sale price (Afs / Kg)	Average gross income per ha (US $)	Average gross income in comparison to wheat base = 100)
Logar	Muhammad Agha	253.6	640.2	152.4	30590	932	1894	258
Qandahar	Arghandab	411.4	623.8	51.6	12670	4327	3642	485
Kunduz	Imam Sahib	303.0	474.4	56.6	10535	836	585	165
Ghazni	Qarabagh	157.8	423.2	168.2	18235	645	781	325
Helmand	Nahr-e Saraj	189.2	405.8	114.5	31150	822	1701	306
Herat	Enjil	269.6	323.2	19.9	17255	1202	1378	265
Herat	Gozara	304.0	316.4	4.1	17675	1360	1597	216
Takhar	Rustaq	151.8	258.8	70.5	4410	651	191	123
Laghman	Mehtarlam	166.0	246.6	48.6	28840	753	1442	357
Qandahar	Panjwai	143.8	241.4	67.9	6160	1269	519	160
Kapisa	Tagab	105.0	218.0	107.6	11165	756	561	162
Zabul	Arghandab	125.8	204.2	62.3	4760	1700	537	132
Nangarhar	Behsud	97.4	193.2	98.4	9275	956	589	184
Nangarhar	Sorkh Rod	109.0	180.8	65.9	17360	890	1026	236
Wardak	Nirkh	83.0	178.0	114.5	11900	1546	1222	192
Qandahar	Shah Wali Kot	60.6	175.4	189.4	14000	1166	1084	258
Kapisa	Nijrab	122.2	164.4	34.5	12565	1348	1125	230
Qandahar	Dand	91.6	157.2	71.6	10185	1196	809	249
Laghman	Alingar	112.0	156.6	39.8	10150	1016	685	137
Ghazni	Jaghuri	66.8	147.6	121.0	9345	1458	905	210
Wardak	Sayedabad	33.4	132.4	296.4	10955	1209	880	174
Kunduz	Char Dara	209.0	129.8	-37.9	12460	1100	910	268
Faryab	Shirin Taqab	75.4	127.6	69.2	9345	1541	957	390
Zabul	Shah Jui	87.6	122.4	39.7	11375	1687	1275	277
Badghis	Qadis	113.6	116.0	2.1	11550	1607	1233	317
Herat	Obeh	66.2	113.6	71.6	9135	1201	729	212
Kabul	Bagrami	222.2	108.8	-51.0	14175	631	594	168
Bamyan	Kahmard	78.4	108.4	38.3	12215	2054	1667	336
Jawzjan	Sang Charak	79.6	106.4	33.7	4235	2059	579	322
Balkh	Dehdadi	69.0	105.0	52.2	15855	1417	1492	264
Kabul	Shakar Dara	45.6	102.4	124.6	12460	908	751	152
Laghman	Qaraghayi	39.0	95.0	143.6	16485	718	786	207
Samangan	Smanagan	92.0	89.8	-2.4	5390	2292	821	304
Faryab	Almar	67.8	79.2	16.8	12670	1706	1436	342
Parwan	Bagram	48.6	78.0	60.5	23450	475	740	70
Logar	Baraki	19.4	77.8	301.0	25060	1261	2099	280
Balkh	Sholgara	64.0	77.8	21.6	7665	1196	609	191
Uruzgan	Khas Uruzgan	34.8	72.4	108.0	2065	1209	166	62
Balkh	Nahr-e Shahi	105.6	71.6	-32.2	11165	1024	759	262
Paktia	Zurmat	50.6	71.2	40.7	8960	1959	1166	238
Baghlan	Nahrin	52.6	67.8	28.9	20650	725	994	332

Table23.4: Status of Onion cultivation, before and after war.

Province	District	Hectares in 1978	Hectares in 1996	% increase / decrease	Average yield (Kg / ha)	Average sale price (Afs / Kg)	Average gross income per ha (US $)	Average gross income in comparison to wheat (base = 100)
Paktia	Mandozai	62.0	67.4	8.7	15330	1400	1426	328
Kabul	Mir Bacha Kot	138.2	64.2	-53.5	14280	671	636	155
Ghor	Saghar	0.8	64.2	7925.0	2590	1111	191	63
Samangan	Khulm	65.0	61.0	-6.2	3465	3451	794	237
Nangarhar	Sherzad	24.2	59.6	146.3	8610	1669	955	131
Ghor	Taiwara	15.6	59.6	282.1	3640	1690	409	109
Logar	Khoshi	9.8	58.2	493.9	16730	1321	1468	244
Helmand	Naw Zad	25.8	56.2	117.8	7000	1747	812	216
Badakhshan	Keshem	37.8	56.0	48.1	8435	1079	605	504
Faryab	Pashtun Kot	38.6	55.8	44.6	8120	2012	1085	286
Bamyan	Saighan	35.2	55.2	56.8	18935	1798	2261	362
Wardak	Chak	22.2	48.8	119.8	7665	1124	572	104
Baghlan	Pul-e Khumri	55.8	44.6	-20.1	10605	1979	1394	473
Takhar	Farkhar	15.4	44.2	187.0	10605	903	636	215
Nangarhar	Hesarak	28.4	43.8	54.2	4340	1390	401	78
Badakhshan	Baharak	97.6	43.8	-55.1	14665	1229	1197	232
Jawzjan	Aqcha	37.0	41.4	11.9	2940	1908	373	134
Herat	Pashtun Zarghun	14.2	41.2	190.1	19530	1833	2378	643
Baghlan	Anderab	39.0	38.8	-0.5	14595	902	874	365
Badakhshan	Jurm	15.2	35.6	134.2	3920	1264	329	105
Paktia	Nadir Shah Kot	28.0	35.2	25.7	33600	1430	3191	580
Nangarhar	Khogiani	15.6	34.8	123.1	12040	1256	1004	150
Uruzgan	Deh Rawod	18.0	32.8	82.2	12845	1064	908	104
Balkh	Balkh center	18.2	30.4	67.0	13230	1365	1200	255
Paktika	Sharan	16.0	26.6	66.3	10780	1539	1102	268
Kabul	Qarabagh	39.8	25.8	-35.2	10220	945	642	85
Uruzgan	Choreh	14.8	25.6	73.0	5950	2380	941	211
Paktika	Urgun	14.4	24.8	72.2	12075	2212	1774	370
Logar	Charkh	17.8	22.0	23.6	11235	1043	778	150
Kunar	Chawkai	10.6	16.0	50.9	13405	1080	962	226
Badghis	Murghab	12.2	13.4	9.8	7175	1453	692	236
Zabul	Mizan	9.4	12.8	36.2	18830	1071	1340	315
Nimroz	Khash Rod	11.6	11.2	-3.4	17500	952	1107	442
Kunar	Khas Kunar	18.6	10.6	-43.0	10955	1029	749	163
Farah	Anar Dara	1.2	8.0	566.7	9905	857	564	269
Kunar	Nur Gul	4.2	6.0	42.9	5600	1414	526	130
Parwan	Ghorband	2.2	1.2	-45.5	12250	929	756	151
Farah	Bala Buluk	0.0	0.0	0.0	0	0	0	0
Total		6008.4	9159.4	52.4				

Table23.5: Status of Tomato cultivation, before and after war.

Province	District	Hectares in 1978	Hectares in 1996	% increase / decrease	Average yield (Kg / ha)	Average sale price (Afs / Kg)	Average gross income per ha (US $)	Average gross income in comparison to wheat (base = 100)
Qandahar	Arghandab	301.0	507.4	68.6	14420	959	919	123
Herat	Enjil	207.0	266.6	28.8	9625	2758	1763	339
Balkh	Dehdadi	191.2	265.0	38.6	17325	1755	2020	358
Herat	Gozara	219.0	240.4	9.8	9835	2043	1335	180
Zabul	Arghandab	131.0	209.8	60.2	4760	1363	431	105
Faryab	Shirin Taqab	110.4	191.2	73.2	15855	1311	1381	563
Nangarhar	Sorkh Rod	98.4	187.0	90.0	15085	886	888	205
Qandahar	Panjwai	99.0	171.0	72.7	6125	2032	827	254
Nangarhar	Behsud	101.4	157.8	55.6	10255	729	497	155
Kapisa	Nijrab	119.0	157.2	32.1	9765	1433	929	190
Qandahar	Dand	98.4	151.6	54.1	9975	1153	764	235
Jawzjan	Sang Charak	102.6	149.4	45.6	14770	697	684	381
Samangan	Smanagan	140.0	138.6	-1.0	4585	1464	446	165
Balkh	Balkh center	73.4	130.0	77.1	6440	2016	862	183
Herat	Obeh	75.6	127.4	68.5	2940	1195	233	68
Helmand	Nahr-e Saraj	71.4	120.2	68.3	8575	1693	964	174
Badghis	Qadis	107.8	116.0	7.6	13545	1616	1454	373
Parwan	Ghorband	332.6	110.4	-66.8	20300	763	1029	206
Kunduz	Imam Sahib	65.0	108.0	66.2	3605	951	228	65
Balkh	Sholgara	67.8	101.2	49.3	13615	1984	1794	561
Baghlan	Nahrin	74.8	99.6	33.2	7980	590	313	105
Nangarhar	Khogiani	45.2	96.4	113.3	10535	1233	863	129
Kabul	Shakar Dara	37.0	89.0	140.5	12845	928	792	160
Kapisa	Tagab	46.4	87.6	88.8	4725	1750	549	159
Kabul	Bagrami	167.8	87.4	-47.9	13475	548	490	138
Laghman	Alingar	59.0	85.0	44.1	4200	1379	385	77
Wardak	Nirkh	39.4	78.2	98.5	9310	2058	1273	200
Samangan	Khulm	66.4	78.0	17.5	3465	1871	431	128
Paktika	Urgun	40.6	73.0	79.8	8400	2215	1236	257
Nangarhar	Sherzad	23.8	68.0	185.7	5460	1405	510	70
Faryab	Almar	52.8	67.4	27.7	14735	1884	1844	439
Kabul	Qarabagh	110.0	67.0	-39.1	10430	1218	844	112
Laghman	Mehtarlam	46.4	66.2	42.7	21525	686	981	242
Balkh	Nahr-e Shahi	91.4	62.8	-31.3	10990	1217	888	307
Herat	Pashtun Zarghun	21.2	62.8	196.2	16590	1906	2100	568
Faryab	Pashtun Kot	33.4	61.2	83.2	10255	1316	896	236
Kabul	Mir Bacha Kot	155.0	55.2	-64.4	15260	545	552	135
Badghis	Murghab	32.4	52.6	62.3	5705	964	365	124
Paktia	Mandozai	39.6	50.6	27.8	10990	2035	1486	341
Parwan	Bagram	30.0	47.8	59.3	22645	590	887	83
Ghor	Saghar	0.2	45.8	22800.0	2520	1857	311	103

Table23.5: Status of Tomato cultivation, before and after war.

Province	District	Hectares in 1978	Hectares in 1996	% increase / decrease	Average yield (Kg / ha)	Average sale price (Afs / Kg)	Average gross income per ha (US $)	Average gross income in comparison to wheat (base = 100)
Zabul	Shah Jui	20.6	43.4	110.7	8610	3166	1811	393
Uruzgan	Deh Rawod	15.0	37.0	146.7	11375	904	683	78
Nangarhar	Hesarak	23.0	36.4	58.3	3675	1379	337	65
Helmand	Naw Zad	16.2	35.0	116.0	4165	1530	423	113
Uruzgan	Choreh	20.0	33.6	68.0	7105	1033	488	109
Logar	Charkh	11.2	31.8	183.9	17010	937	1059	204
Paktia	Nadir Shah Kot	25.4	31.2	22.8	17675	2115	2483	452
Farah	Bala Buluk	2.8	30.2	978.6	6020	887	355	182
Logar	Baraki	6.2	28.0	351.6	21315	1463	2071	276
Paktia	Zurmat	11.6	23.4	101.7	10920	2110	1530	312
Takhar	Rustaq	9.8	21.8	122.4	3220	433	93	61
Baghlan	Pul-e Khumri	38.2	21.6	-43.5	5495	2038	744	253
Jawzjan	Aqcha	20.2	21.6	6.9	8645	698	401	143
Uruzgan	Khas Uruzgan	8.8	21.6	145.5	3430	1351	308	117
Wardak	Sayedabad	7.6	17.8	134.2	22365	1441	2141	424
Badakhshan	Keshem	10.8	16.4	51.9	6230	745	308	258
Takhar	Farkhar	7.4	15.2	105.4	10535	2089	1462	495
Badakhshan	Baharak	32.8	14.2	-56.7	3360	2099	468	91
Farah	Anar Dara	0.4	13.4	3250.0	4095	952	259	124
Ghazni	Jaghuri	5.2	11.6	123.1	13300	2255	1992	463
Ghor	Taiwara	5.8	11.4	96.6	5600	1637	609	163
Badakhshan	Jurm	5.4	11.0	103.7	2765	1138	209	67
Laghman	Qaraghayi	7.4	10.4	40.5	7805	680	353	93
Kunar	Chawkai	5.6	10.2	82.1	6685	2774	1232	289
Kunar	Khas Kunar	14.8	9.6	-35.1	8400	1521	849	185
Wardak	Chak	4.0	9.0	125.0	25375	2519	4246	772
Nimroz	Khash Rod	3.6	5.6	55.6	4585	755	230	92
Qandahar	Shah Wali Kot	2.8	4.4	57.1	3675	2000	488	117
Bamyan	Kahmard	2.8	4.0	42.9	6405	1286	547	110
Kunar	Nur Gul	4.4	3.2	-27.3	4445	1857	548	136
Logar	Khoshi	0.4	2.6	550.0	7665	1518	773	129
Baghlan	Anderab	2.0	2.4	20.0	4375	929	270	113
Kunduz	Char Dara	6.4	2.4	-62.5	3290	792	173	51
Ghazni	Qarabagh	0.6	1.8	200.0	11270	2286	1711	713
Paktika	Sharan	0.4	0.8	100.0	9100	2238	1353	330
Logar	Muhammad Agha	0.0	0.0	0.0	0	0	0	0
Zabul	Mizan	0.0	0.0	0.0	0	0	0	0
Bamyan	Saighan	0.0	0.0	0.0	0	0	0	0
Total		4284.4	5681.8	32.6				

Table23.6: Status of Cauliflower cultivation, before and after war.

Province	District	Hectares in 1978	Hectares in 1996	% increase / decrease	Average yield (Kg / ha)	Average sale price (Afs / Kg)	Average gross income per ha (US $)	Average gross income in comparison to wheat (base = 100)
Nangarhar	Behsud	114.2	201.2	76.2	29785	299	592	184
Laghman	Mehtarlam	37.0	58.2	57.3	16695	574	637	157
Nangarhar	Sorkh Rod	28.8	47.6	65.3	21910	676	984	226
Laghman	Qaraghayi	20.4	29.0	42.2	5705	666	252	66
Laghman	Alingar	10.8	19.8	83.3	18620	877	1085	217
Nangarhar	Hesarak	4.0	5.4	35.0	4025	1984	530	103
Kunar	Khas Kunar	0.6	4.8	700.0	36155	238	572	124
Wardak	Chak	0.2	2.6	1200.0	28105	2733	5102	928
Wardak	Sayedabad	0.4	1.8	350.0	96670	2333	14980	2966
Badakhshan	Keshem	0.8	1.6	100.0	13300	714	631	525
Nangarhar	Sherzad	0.0	1.0	100.0	15190	911	919	126
Paktia	Nadir Shah Kot	0.4	0.4	0.0	18410	2112	2583	469
Ghazni	Jaghuri	0.0	0.2	20.0	3500	2286	531	123
Kabul	Bagrami	0.0	0.0	0.0	0	0	0	0
Kabul	Shakar Dara	0.0	0.0	0.0	0	0	0	0
Kabul	Mir Bacha Kot	0.0	0.0	0.0	0	0	0	0
Kabul	Qarabagh	0.0	0.0	0.0	0	0	0	0
Kapisa	Tagab	0.0	0.0	0.0	0	0	0	0
Kapisa	Nijrab	0.0	0.0	0.0	0	0	0	0
Parwan	Ghorband	0.0	0.0	0.0	0	0	0	0
Parwan	Bagram	0.0	0.0	0.0	0	0	0	0
Wardak	Nirkh	0.0	0.0	0.0	0	0	0	0
Logar	Baraki	0.0	0.0	0.0	0	0	0	0
Logar	Khoshi	0.0	0.0	0.0	0	0	0	0
Logar	Charkh	0.0	0.0	0.0	0	0	0	0
Logar	Muhammad Agha	0.0	0.0	0.0	0	0	0	0
Ghazni	Qarabagh	0.0	0.0	0.0	0	0	0	0
Paktika	Sharan	0.0	0.0	0.0	0	0	0	0
Paktika	Urgun	0.0	0.0	0.0	0	0	0	0
Paktia	Mandozai	0.0	0.0	0.0	0	0	0	0
Paktia	Zurmat	0.0	0.0	0.0	0	0	0	0
Nangarhar	Khogiani	0.0	0.0	0.0	0	0	0	0
Kunar	Chawkai	0.0	0.0	0.0	0	0	0	0
Kunar	Nur Gul	0.0	0.0	0.0	0	0	0	0
Badakhshan	Jurm	0.0	0.0	0.0	0	0	0	0
Badakhshan	Baharak	0.0	0.0	0.0	0	0	0	0
Takhar	Rustaq	0.0	0.0	0.0	0	0	0	0
Takhar	Farkhar	0.0	0.0	0.0	0	0	0	0
Baghlan	Pul-e Khumri	0.0	0.0	0.0	0	0	0	0
Baghlan	Nahrin	0.0	0.0	0.0	0	0	0	0
Baghlan	Anderab	0.0	0.0	0.0	0	0	0	0

Table23.6: Status of Cauliflower cultivation, before and after war.

Province	District	Hectares in 1978	Hectares in 1996	% increase / decrease	Average yield (Kg / ha)	Average sale price (Afs / Kg)	Average gross income per ha (US $)	Average gross income in comparison to wheat (base = 100)
Kunduz	Imam Sahib	0.0	0.0	0.0	0	0	0	0
Kunduz	Char Dara	0.0	0.0	0.0	0	0	0	0
Samangan	Smanagan	0.0	0.0	0.0	0	0	0	0
Samangan	Khulm	0.0	0.0	0.0	0	0	0	0
Balkh	Balkh center	0.0	0.0	0.0	0	0	0	0
Balkh	Nahr-e Shahi	0.0	0.0	0.0	0	0	0	0
Balkh	Dehdadi	0.0	0.0	0.0	0	0	0	0
Balkh	Sholgara	0.0	0.0	0.0	0	0	0	0
Jawzjan	Sang Charak	0.0	0.0	0.0	0	0	0	0
Jawzjan	Aqcha	0.0	0.0	0.0	0	0	0	0
Faryab	Pashtun Kot	0.0	0.0	0.0	0	0	0	0
Faryab	Almar	0.0	0.0	0.0	0	0	0	0
Faryab	Shirin Taqab	0.0	0.0	0.0	0	0	0	0
Badghis	Murghab	0.0	0.0	0.0	0	0	0	0
Badghis	Qadis	0.0	0.0	0.0	0	0	0	0
Herat	Enjil	0.0	0.0	0.0	0	0	0	0
Herat	Gozara	0.0	0.0	0.0	0	0	0	0
Herat	Pashtun Zarghun	0.0	0.0	0.0	0	0	0	0
Herat	Obeh	0.0	0.0	0.0	0	0	0	0
Farah	Anar Dara	0.0	0.0	0.0	0	0	0	0
Farah	Bala Buluk	0.0	0.0	0.0	0	0	0	0
Nimroz	Khash Rod	0.0	0.0	0.0	0	0	0	0
Helmand	Nahr-e Saraj	0.0	0.0	0.0	0	0	0	0
Helmand	Naw Zad	0.0	0.0	0.0	0	0	0	0
Qandahar	Dand	0.0	0.0	0.0	0	0	0	0
Qandahar	Arghandab	0.0	0.0	0.0	0	0	0	0
Qandahar	Panjwai	0.0	0.0	0.0	0	0	0	0
Qandahar	Shah Wali Kot	0.0	0.0	0.0	0	0	0	0
Zabul	Mizan	0.0	0.0	0.0	0	0	0	0
Zabul	Shah Jui	0.0	0.0	0.0	0	0	0	0
Zabul	Arghandab	0.0	0.0	0.0	0	0	0	0
Uruzgan	Khas Uruzgan	0.0	0.0	0.0	0	0	0	0
Uruzgan	Deh Rawod	0.0	0.0	0.0	0	0	0	0
Uruzgan	Choreh	0.0	0.0	0.0	0	0	0	0
Ghor	Saghar	0.0	0.0	0.0	0	0	0	0
Ghor	Taiwara	0.0	0.0	0.0	0	0	0	0
Bamyan	Kahmard	0.0	0.0	0.0	0	0	0	0
Bamyan	Saighan	0.0	0.0	0.0	0	0	0	0
Total		217.6	373.6	71.7				

Table23.7: Status of Okra cultivation, before and after war.

Province	District	Hectares in 1978	Hectares in 1978	% increase / decrease	Average yield (Kg / ha)	Average sale price (Afs / Kg)	Average gross income per ha (US $)	Average gross income in comparison to wheat (base = 100)
Nangarhar	Sorkh Rod	224.0	421.8	88.3	18060	1181	1417	325
Nangarhar	Behsud	100.6	210.6	109.3	10675	1101	781	244
Qandahar	Arghandab	117.2	203.8	73.9	4620	1580	485	65
Balkh	Dehdadi	140.2	198.8	41.8	12005	1429	1139	202
Qandahar	Dand	101.8	163.4	60.5	9660	1123	721	222
Qandahar	Panjwai	86.0	153.4	78.4	5810	1833	707	218
Kapisa	Nijrab	93.4	123.4	32.1	5565	1516	560	114
Helmand	Nahr-e Saraj	75.4	116.8	54.9	2835	2396	451	81
Laghman	Mehtarlam	54.4	93.0	71.0	14875	680	672	165
Balkh	Balkh center	41.4	80.0	93.2	5250	2133	744	159
Kunduz	Imam Sahib	45.8	79.6	73.8	3570	1148	272	76
Laghman	Alingar	50.6	75.8	49.8	3640	1254	303	61
Herat	Enjil	48.0	57.0	18.8	6370	2547	1078	208
Zabul	Arghandab	35.2	54.4	54.5	2905	3041	587	143
Kapisa	Tagab	28.0	50.8	81.4	3815	1626	412	119
Paktika	Urgun	27.8	50.8	82.7	7455	2257	1118	233
Paktia	Mandozai	35.8	45.0	25.7	10570	2033	1427	328
Zabul	Shah Jui	15.8	34.4	117.7	3150	3500	732	159
Samangan	Smanagan	30.6	33.6	9.8	3325	1793	396	146
Uruzgan	Deh Rawod	7.0	32.2	360.0	4935	1001	328	38
Laghman	Qaraghayi	10.4	28.8	176.9	5285	1023	359	95
Nangarhar	Hesarak	18.8	28.6	52.1	2380	2352	372	72
Helmand	Naw Zad	12.4	27.4	121.0	4620	2665	818	219
Paktia	Nadir Shah Kot	3.4	27.2	700.0	14595	2375	2302	418
Nangarhar	Sherzad	10.4	25.6	146.2	2205	1475	216	29
Nimroz	Khash Rod	19.8	22.4	13.1	5215	1143	396	158
Uruzgan	Choreh	16.0	21.8	36.3	5950	1260	498	112
Baghlan	Pul-e Khumri	17.0	20.6	21.2	1715	2363	269	92
Farah	Bala Buluk	1.4	17.8	1171.4	4935	882	289	149
Nangarhar	Khogiani	7.6	11.0	44.7	9030	1475	885	132
Faryab	Pashtun Kot	7.6	10.6	39.5	2170	3057	441	116
Badakhshan	Keshem	6.0	10.0	66.7	4725	2036	639	533
Balkh	Nahr-e Shahi	8.2	8.8	7.3	3255	1829	395	136
Kunduz	Char Dara	19.6	7.8	-60.2	3010	1657	331	97
Herat	Gozara	7.0	7.2	2.9	6790	1643	741	100
Herat	Obeh	2.6	6.8	161.5	2800	1452	270	78
Kunar	Chawkai	7.0	6.6	-5.7	16415	1197	1305	307
Baghlan	Nahrin	1.6	5.8	262.5	6160	709	290	97
Uruzgan	Khas Uruzgan	3.6	5.6	55.6	1750	2843	330	125
Qandahar	Shah Wali Kot	2.4	4.4	83.3	3500	2143	498	119
Kunar	Nur Gul	1.4	3.6	157.1	5075	2571	867	214

Table23.7: Status of Okra cultivation, before and after war.

Province	District	Hectares in 1978	Hectares in 1978	% increase / decrease	Average yield (Kg / ha)	Average sale price (Afs / Kg)	Average gross income per ha (US $)	Average gross income in comparison to wheat (base = 100)
Faryab	Shirin Taqab	1.8	2.8	55.6	5950	2000	790	322
Kabul	Mir Bacha Kot	1.4	2.4	71.4	3500	1071	249	61
Kabul	Bagrami	5.0	2.0	-60.0	5110	914	310	87
Samangan	Khulm	1.6	2.0	25.0	3220	2429	520	155
Takhar	Farkhar	0.6	1.8	200.0	4200	1429	399	136
Paktia	Zurmat	0.4	1.6	300.0	6265	3429	1427	291
Jawzjan	Aqcha	0.8	1.6	100.0	3710	1214	299	107
Kabul	Qarabagh	1.6	1.2	-25.0	24500	3429	5580	739
Logar	Baraki	0.0	1.2	120.0	17255	2464	2824	377
Balkh	Sholgara	1.2	1.2	0.0	3500	5500	1279	400
Jawzjan	Sang Charak	0.6	1.0	66.7	2800	1143	213	119
Bamyan	Kahmard	0.6	0.8	33.3	3150	1571	329	67
Parwan	Ghorband	1.0	0.6	-40.0	21350	1179	1672	334
Wardak	Chak	0.0	0.6	60.0	11795	4167	3265	594
Kunar	Khas Kunar	0.4	0.6	50.0	8750	571	332	72
Herat	Pashtun Zarghun	0.4	0.6	50.0	8575	1657	944	255
Wardak	Sayedabad	0.0	0.4	40.0	0	0	0	0
Ghazni	Jaghuri	0.2	0.4	100.0	3010	2514	503	117
Farah	Anar Dara	0.0	0.2	20.0	4375	1500	436	207
Kabul	Shakar Dara	0.0	0.0	0.0	0	0	0	0
Parwan	Bagram	0.0	0.0	0.0	0	0	0	0
Wardak	Nirkh	0.0	0.0	0.0	0	0	0	0
Logar	Khoshi	0.0	0.0	0.0	0	0	0	0
Logar	Charkh	0.0	0.0	0.0	0	0	0	0
Logar	Muhammad Agha	0.0	0.0	0.0	0	0	0	0
Ghazni	Qarabagh	0.0	0.0	0.0	0	0	0	0
Paktika	Sharan	0.0	0.0	0.0	0	0	0	0
Badakhshan	Jurm	0.0	0.0	0.0	0	0	0	0
Badakhshan	Baharak	0.0	0.0	0.0	0	0	0	0
Takhar	Rustaq	0.0	0.0	0.0	0	0	0	0
Baghlan	Anderab	0.0	0.0	0.0	0	0	0	0
Faryab	Almar	0.0	0.0	0.0	0	0	0	0
Badghis	Murghab	0.0	0.0	0.0	0	0	0	0
Badghis	Qadis	0.0	0.0	0.0	0	0	0	0
Zabul	Mizan	0.0	0.0	0.0	0	0	0	0
Ghor	Saghar	0.0	0.0	0.0	0	0	0	0
Ghor	Taiwara	0.0	0.0	0.0	0	0	0	0
Bamyan	Saighan	0.0	0.0	0.0	0	0	0	0
Total		1560.8	2610.0	67.2				

2.2. Main Sources of Information for Extension Support to Farming Communities (in Percent Ranking)

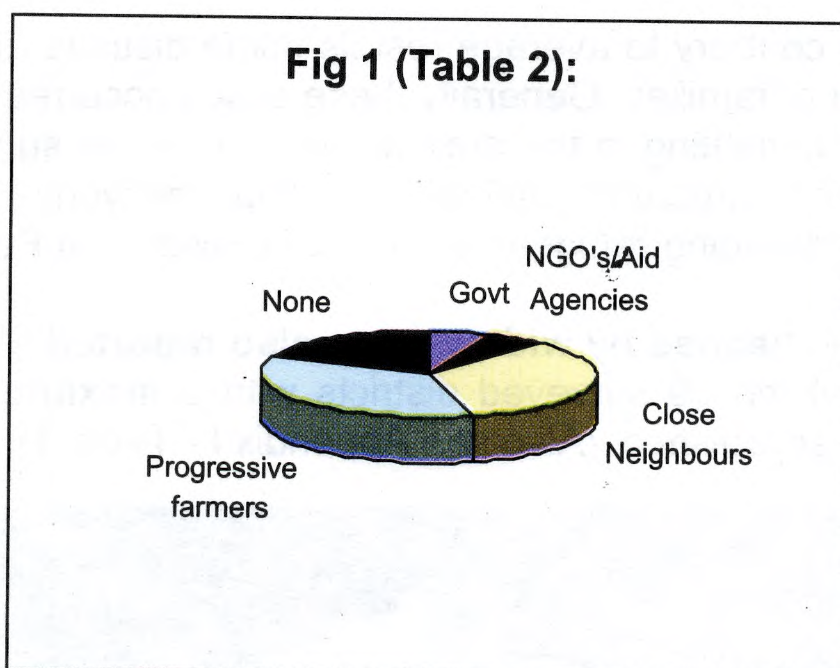
To assess main sources of information for extension support at the community-level and the impact of on-going programmes being implemented through IPs/NGOs and to identify the most appropriate strategy to provide extension support to communities.

Main findings:

In each village, farm communities were requested to mention their sources of information for extension support in agriculture. Average answer from the 79 districts has been as follows:

1. Government extension workers	05.8 %
2. NGOs / Aid agencies	05.7 %
3. Close village neighbors	34.1 %
4. Progressive farmers	35.2 %
5. None	19.2 %

Fig 1 (Table 2):



Despite all investments and efforts that have been made by donors and NGOs to rehabilitate the agriculture sector it is noticeable that only a few recipient communities seem to recognize a significant beneficial impact of these programmes. This may partially be explained considering the fact that activities from UN agencies (e.g. UNDP/PEACE Initiative Programme, UNDCP, UNHCR, etc.) and most NGOs remain mostly focussed on a few selected districts generally of easier access while little or no assistance is reaching populations living in remote areas.

A main lesson learnt from this survey is that **the prevailing channel for the exchange of agricultural extension information within/between the communities is through close village neighbors (34.1%) or through progressive farmers from the area (35.2%).**

This is a very strong argument in favor of promoting a development strategy focussing on community empowerment through community level capacity building as such a strategy will enable them to implement their own extension activities, as being currently done through the FAO Crops / IPP "Farmers Field School" programme. (Also see Appendix I - Table 2).

2.3. Main Decision Makers at Village Level (in average ranking)

Under the current political situation, it is difficult to refer to "local authorities" as reliable counterparts for supporting the implementation of long-term development programmes. Village communities were therefore requested to identify and rank the most prominent community level decision-makers who could act as regular counterparts to supervise the implementation of rehabilitation and development programmes.

Main findings:

Survey results have been differentiated in two categories as whether the surveyed areas were under control of Talibans or anti-Taliban groups at the time of the survey. This was done in order to assess to which extent "local authorities" with their very different system of governance were influencing community level decision making. The following average results were obtained: (Also see Appendix I - Table 3).

Average Ranking	Taliban Controlled Areas	Taliban-Opposition Controlled Areas
1st	**elder**	commander
2nd	maulvi	**elder**
3rd	malik	maulvi
4th	commander	malik
5th	teacher	khan
6th	khan	teacher
7th	government	government
8th	trader	trader

These results show a significant difference at higher decision-making levels between the two different systems of governance. As result it appears that elders and religious leaders play a prominent decision-making role under taliban controlled areas while these are mostly commanders and elders under Taliban-opposition controlled areas.

The most significant result is that whatever is the prevailing system of governance, **elders are always playing a very important traditional role in community level decision making.** Therefore the role of these elders Shuras must be taken into consideration for the elaboration of rehabilitation and development programme strategies though precautions will always have to be taken to ensure that these Shuras are fully committed with the goals and objectives of these programmes.



Terminology:

Maulvi: A religious person from the village who is considered as the spiritual leader of the community, and is often called to give his opinion and make a decision in the solution of problems and disputes among the villagers.

Commander: Initially, a local leader who conducted Afghan villagers to armed resistance against Soviet occupation. This term has been maintained for factional leaders who are now imposing their rules through the power of arms on their respective community groups.

Malik: An educated person who is selected by the people of a village and is officially recognized as their representative by Governmental institutions, though he is not getting any salary for rendering this service. There is only one malik per village, and he is traditionally acting as a mediator for the solution of disputes among the villagers, and for disputes between the villagers and the government. The Malik is also called "Arbab" in some cross-border areas to Pakistan.

Khan: A rich and influential landlord descending from a feudal family. A khan does not work himself on his land and he employs most of local people, many of them being at the same time in debt to (and sometime bound to) him with short term or long term loans. In the past his decisions at village level were very much accepted and respected. It was generally preferred that disputes among villagers to be solved by him rather than reaching governmental authorities. The khan is also called "By" in the northern region of Afghanistan.

Elder: Usually an old respected and honest person from the Afghan community whose decisions are respected and accepted by the villagers. Traditionally he is solving any kind of problem arising between the villagers and not allowing disputes to reach governmental authorities.

NB: An elder could eventually be any of the above mentioned persons at the same time (maulvi, malik, khan, or commander)

2.4. Health and Educational Structures

This question was asked to identify the existence of health and educational structures (buildings) though it does not mean whether these are currently operational or not, and to determine whether these structures could eventually be used for implementing community level extension programmes in agriculture/ horticulture.

Main findings:

Health Structures: The existence of health structures (e.g. Basic Health Units- BHUs) within a half-day walking distance appeared comparatively quite low with only **9.1% of village communities** having access to such structures. It would be worth considering the use of these health structures to conduct integrated training programmes for women on kitchen gardening and family nutrition.

Educational Structures: On the average, it has been observed that **60.7% of village communities** had access to a building to be used as a school. In most cases these structures could eventually be used for implementing school-gardening and other educational projects when and where conditions would allow. (Also see Appendix I - Table 4).

2.5. Land Holding Status

To assess arable land availability per family/capita in relation to food security and relative number of landless families sustaining their life through land rent or share cropping.

Main Findings

It appeared that an average of about **2.9 ha. of arable land per family** is available (including landless families) hence representing an estimated average of about **0.32 ha. of arable land per capita** (including both irrigated and rainfed land). An average of **26.5% of families are landless** and are therefore sustaining their life from land rent mainly through the traditional share cropping system
On the average, Government lands holding represents less than 1% of the total arable land. In 1996, only 8% of that Government land were actually cultivated by local authorities themselves. Nearly 30% of the Government land were cultivated by private farmers, sharecroppers and commanders, the rest being left as fallow land. (Also see Appendix I - Table 5)

2.6. Land irrigation Status and

2.7 Rehabilitation Requirements of Irrigation Structures

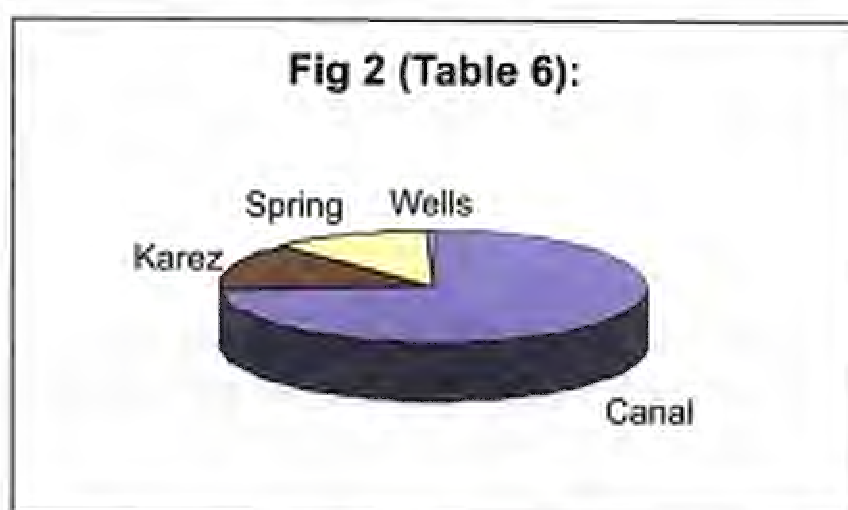
To assess the actual potential for promoting irrigated crops as a most reliable mean to ensure food security and to assess the main problems to be addressed in relation to water deficiency and requirements for the rehabilitation of irrigation networks.



Main Findings

Irrigated land represents 50.3% of total arable land in 79 districts surveyed. However, large regional fluctuations are observed since most of rainfed areas are located in the northern provinces of Afghanistan. The most common irrigation systems include **canal (72.9%)**, followed by **karez (14.6%), spring (11.8%), and wells (0.6%).**

Fig 2 (Table 6):



As reported by communities, there is a **water deficiency in 73.8% of surveyed villages.**

Where irrigation structures already exist but are not any more operational due to damages or lack of maintenance, main requirements for their improvement or rehabilitation have been categorized as follows:

Rehabilitation requirements	Average of cases (%)
1. Canal or karez cleaning	32.3
2. Intake infrastructure repair	29
3. Canal infrastructure repair	14.3
4. Flood control / water harvesting	9.7
5. Dam / reservoir	2.8
6. Other	11.9

Fig 3 (Table 7):





Terminology

Karez: A "karez" (or "kanat") is an old traditional irrigation system, which was developed centuries ago in the arid regions of Iran and Afghanistan. It is also called "foggaras" in North Africa and "falajes" in Oman. A karez is a hand made network of underground tunnels with a very slight slope (about 0.001%) which are tapping water from aquifers and transport it by gravity to the ground surface. The tunnel size varies from about 0.7 to 1.2 meter in diameter and with a length which can reach several kilometers. In Afghanistan the longest karez reaches 13 km. In Iran, a karez network is reported to reach a length of 80 km and a depth of 80 meters under the ground surface. Every 20 to 30 meters, these tunnels are connected to the ground surface by vertical wells that are used for the periodical cleaning of the karez (excavation of silt material), and for the aeration of the tunnel. The average discharge of a karez is of about 100 to 250 liters/second, that is enough to flood/irrigate 25 hectares of land. Construction of new karez may nowadays appear uneconomical, but their good

maintenance and protection is essential to preserve large areas of irrigated land. Therefore, digging of deep wells close by a karez should be strictly avoided as it may result in a lowering the aquifers feeding the karez.

2.8. Farm Power and Mechanization Status in Relation to Area under Cultivation

To assess the level of farm power and mechanization and find out the extent that this can be a limiting factor to crop production development.

Main findings:

Average results on the 79 surveyed districts were as follow:

	Currently Available	Approx. Standard Requirement
Average number of pairs of oxens /1000 ha:	57.7	200
Average number of tractors / 1000 ha:	2.6	17
Average number of threshers / 1000 ha:	0.4	32

These results show a striking evidence of a very severe deficit in farm power and machinery. This deficit is a limiting factor to land rehabilitation and crop production development and needs to be addressed with a high level of priority (Also see Appendix I -Table 8).

2.9. Land Use in Horticulture

To assess the proportion of arable (irrigated and rainfed) land being used for growing horticultural crops and its prospects for horticultural crop production development.

Main findings:

On the average, **9.9% of total arable land area (irrigated and rainfed) were used for horticultural crops cultivation** of which 5.3% for orchards and 4.6% for vegetable crops (including potato). In districts where all horticultural crops need irrigation, **16% of irrigated land on the average were used in 1996 for horticultural crops cultivation.** As a comparison, a non-field survey[2] implemented in 1977 indicated that only 6% of arable land and 10% of irrigated land were used for horticultural crops cultivation.

Horticultural crops are therefore playing an increasing role in the rural economy. The highest percentage of land being used for horticultural crops cultivation were recorded in peri-urban districts of main cities where this ratio can reach from 25% to

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[2] Report No 1324-AF
Horticultural Subsector Survey Afghanistan (Vol. II, 5th May 1977)
Agricultural Credit and Agroindustries Division
Projects Department - WORLD BANK

45% of the irrigated land area. In extreme cases, horticultural crops may even occupy **up to 69.3% of irrigated land** such as in Arghandab district of Kandahar province. On the contrary, horticultural crops have a limited development in some remote rural areas, such as in Kash Rod district of Nimroz province where they occupy only 0.6% of irrigated land area. Such a situation can eventually be caused by a combination of factors such as lack of awareness of the communities on the nutritional value of horticultural products, lack of knowledge in horticultural crops production techniques, lack of seeds or planting materials, lack of market, etc. In these particular cases, the promotion and development of horticultural crops production would need to be addressed with a specific strategy (Also see Appendix I - Table 9).

2.10. Comparative Status of Orchards in each District between 1978 and 1996

To assess the extent of damages caused to orchards during the conflict and to assess progress already achieved in reestablishing new orchards.

Main findings:

Based on a question asking farmers about the **total** orchard area in their village, it appears that in the 79 surveyed districts, a total of 74,918 ha. were under orchards in 1978 and 88,389 ha. in 1996. This represents an **average increase of 18 % between 1978 and 1996.** Furthermore, the report indicates that on the average:

1. **20.8%** of orchards are **0-5 years old**
2. **20.1%** of orchards are **6-15 years old**
3. **59.1%** of orchards are **more than 15 years old**

This result is very significant of the impact of fruit tree nursery projects conducted in the course of the 90's for the rehabilitation of the fruit sub-sector. It is also very significant of the spontaneous interest of farmers to promote fruit production though with limited extension and marketing support. More than 40% of orchards are less than 15 years old and were established or reestablished during the war period. Fruit production being a long-term perennial activity, this result is therefore very meaningful of the strong desire (and confidence?) of rural communities to rebuild their life in a peaceful and stable context. It is also very significant of the desire of farmers to ensure their food security and a sustainable livelihood through a gradual shift from a subsistence economy to a market economy through the promotion of higher value cash crops. Therefore, in most districts the fruit sub-sector should not be considered as under "rehabilitation" but already in a phase of "development" with a **growth rate in fruit orchard area of about 4 to 5% per year.** Hence, this will again confirm the need to adopt a programme strategy emphasizing community participation. In addition, this programme should expand its activities with more emphasis on improved orchard management practices to improve production quality while post-harvest and marketing aspects will also need to be addressed.

Meanwhile, it should also be considered that rehabilitation activities could not be implemented in a number of districts where considerable damages have been caused to orchards. This is particularly the case of the northern districts of Kabul

("Shamali"), Kapisa, and Parwan provinces where fruit production was a primary source of income for farming communities in the past. For example, a severe deficit in orchard area still remains in Mir Bacha Kot district (-61.8%) of Kabul province. With the aim of compensating this deficit, more than 20 private nurseries (from 2000 to 4000 sq.m. each) were supported by FAO in this region in the course of 1996 and 1997 seasons. Unfortunately, the region came again under frontline fighting since September 1996, thus delaying again the whole rehabilitation process (Also see Appendix I -Table 10)

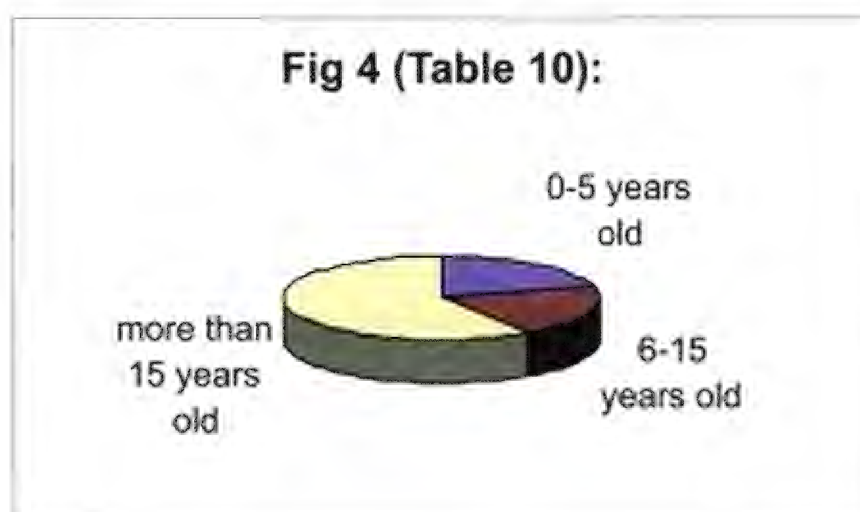


Fig 4 (Table 10):

2.11. Comparative Status of Orchards per Fruit Species between 1978 and 1996

To assess the evolution of orchard area per species in order to anticipate future production trends.



Main Findings:

Based on a question asking farmers about the area planted with different fruit species in their villages, it appeared necessary, though somewhat arbitrary, to separate fruit species into two different categories:

- Fruit species planted in **private orchards** with a specific spacing between trees and receiving specific managerial care for intensive cash crop production were reported with a total area of **63,563 ha. in 1978** and **78,850 ha. in 1996.** This represents a **24.1 % area increase** during that period.

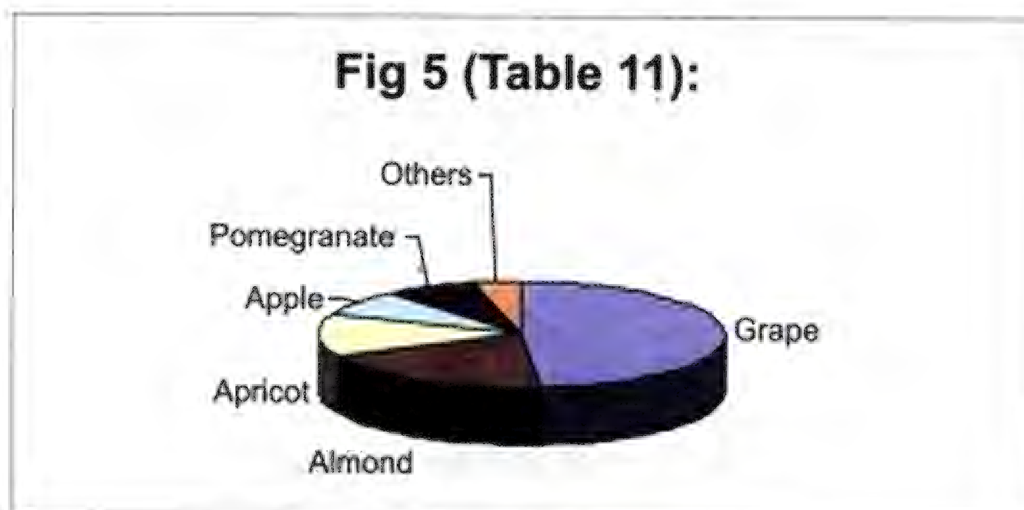
- Fruit species growing on **marginal land plantations,** often scattered and at random planting distance (e.g. along irrigation canals, on community land, etc), without any kind of managerial care and mostly for domestic consumption purposes were reported with an equivalent total area of **33,616 ha. in 1978** and **21,723 ha. in 1996.** This represents a decrease of **minus 35.4% in planted area.** This can eventually be explained with the fact that marginal land mostly belongs to communities or to the Government. As a result, these plantations were often left without any rational management during that period.

NB: It must be remarked, that total figures are slightly different because farmers were asked to report orchard areas through different questions as a means to cross-check the accuracy and consistency of their answers. Hence, farmers were asked questions as follows:

- "total orchard area" at village level for all fruit species (see previous para. 2.10 - Appendix table 10) and
- "area per species" (as in this para. 2.11 Appendix table 11 and table series 22).

Some level of discrepancy between these total figures was inevitable. It must be recognized that in the particular of Afghanistan, it is always difficult to estimate the actual orchard area. The reason is that some fruit species are growing either in intensive orchards or extensively growing on marginal land (e.g. along irrigation canals). It is therefore always difficult and arbitrary to categorize fruit species as whether these are growing in intensive orchards or on marginal land.

A striking aspect of these results also is the low level of diversification of fruit production in intensive orchards. In 1996, **95.9% of orchards/vineyards were established with only 5 different fruit species**, half of which being grapes (48.4%), followed by almond (19.6%), apricot (12.9%), apple (7.8%) and pomegranate (7.2%).



EXECUTIVE SUMMARY

Main Findings

The horticultural sector has experienced rapid changes in the course of recent years, first with a decline of activities which coincided with the beginning of the war and the emigration of refugee populations in 1979, and second with a gradual rehabilitation which started from the beginning of the 90s. This rehabilitation process further accelerated in the mid-90s with the steady return of refugees to their villages.

This field survey was conducted during the second semester of 1996 in 79 districts (7003 villages) throughout all provinces of Afghanistan. It was reported that the number of rural families increased by about 24.6% between 1978 and 1996, though a number of families were still in exile at that time. An average number of about 9 persons per family living on the same landholding was also recorded while an average of 11.2% families were also recorded to be headed by a widow.

Main village level decision makers are mostly religious leaders in Taliban controlled areas, or military commanders in Taliban-opposition controlled areas, but as per cultural traditions, elders continue to play a prominent decision making role.

In 70% of the cases, the main source of information for extension support to farming communities comes directly from progressive community farmers and neighbours. Only 11% of farming communities reported to receive technical information or extension support from governmental or non-governmental agencies. 19% of farming communities reported having no access to any kind of technical information or extension support. It also appears that 50.3% of total arable land (in the 79 surveyed districts) is irrigated. An average of 2.9 hectares of arable land is available per family, thus representing an average of about 0.32 hectare of arable land per capita. However, the average size of landholding varies considerably depending upon the region. The surveyed area was counting 26.5% landless families, most of them sustaining their life as 'share croppers'.

A deficit in irrigation water is reported in 73.8% of the surveyed area, and is considered by farmers as the main limiting factor to the development of horticultural crops. Irrigation is made through canals (72.9%), "karez" (14.6%), springs (11.8%), and wells (0.6%). The main requirements for the rehabilitation of irrigation infrastructures are the cleaning of canals and "karez" (32.3%), the repair of water intake infrastructures (29%), the repair of canal infrastructures (14.3%), the construction of flood control / water harvesting infrastructures (12.5%), and others (11.9%).

Another severe limitation to the development of agricultural and horticultural crops is the very low level of farm power with an average of only 57.7 pairs of oxen, 2.6 tractors, and 0.4 threshers per 1000 hectares. Based on standard requirements, these figures represent a shortfall of 143 pairs of oxen, 14 tractors, and 31.3 threshers per 1000 hectares.

Countrywide Trends:

The higher orchard area growth rates of main fruit species during the last eighteen years of war between 1978 and 1996 have been recorded for apple (+ 73.8 %), followed by almond (+62.2 %), peach (+32.6 %), plum (+22.7 %), apricot (+22.6 %) and grape (+13.1 %). With reference to the relative importance of orchards for each of these main species and taking into consideration the replacement of old orchards, the annual replanting rate in percentage of the total area in 1996 can also be estimated as follows:

Species	Annual Average of Planting/Replanting rate (%)	
	(1981 –1990)	(1991- 1996)
Grape	1.22	3.08
Almond	2.84	4.26
Apricot	2.91	5.18
Apple	3.15	7.06
Pomegranate	1.68	4.94
Peach	3.38	8.14

The annual rates of replanting have probably been even higher in the late 90's with the increasing number of private nurseries that have been established during that period. Should these rates of reestablishing be maintained, this will significantly contribute to an overall rejuvenation of orchards in Afghanistan. This will also create opportunities to revolutionize farmers' traditional orchard management practices as many Afghan farmers still have a tendency to maintain very old orchards without rational management and sometime as a remembrance of their ancestors though such old orchards are not anymore economically productive.

At the same time, such annual growth rates are again very meaningful of the enthusiasm of a new generation of progressive Afghan farmers to expand areas under modern orchards. Meanwhile, there is no precise information on the long term market demand for these fruit species and there will be a critical need for carrying out market studies for a better planning of fruit production development inside Afghanistan.

2.12. Status of Fruit Crop Management Practices

It was observed that though Afghanistan is blessed with its climate for producing high quality fruits, production quality still remains at a lower standard as compared to international quality standards. This situation results in a lower value of the fruits on the market and a loss of opportunity for farming families to increase their income. Hence, the purpose of the survey here was to assess the level of most basic orchard management practices and scope for improvement.

Main findings:

The results of the survey indicate that in 79 districts:

28.1 %	farmers practice tree pruning
11.3 %	farmers use chemical fertilizers on fruit orchards
21.4 %	farmers control pests and diseases
11.1%	farmers use "improved" budded cultivars

These figures indicate a lack of awareness on the part of farmers on the technical and economical advantages of implementing improved orchard management practices. This is quite regrettable as it comes in contradiction to their demonstrated interest in promoting fruit production. These findings therefore clearly justify the **crucial need for further developing extension programmes with focus on farmers training on improved orchard management practices** (Also see Appendix I - Table 12)

2.13. Bee Keeping Status in Relation to Fruit Growing Area

Data were collected in connection to the important role being played by bees in fruit tree pollination and subsequent fruit setting. Moreover, honey production can also be a significant source of additional income for farming families within an integrated horticulture-based farming system.

Main findings:

Out of 79 surveyed districts, 4.5% of villages had at least one bee-keeping family, with a total of 2,203 bee-keeping families and 13,000 beehives. This represents an average of **147 beehives per 1000 ha. of orchards**. Meanwhile, there are large variations from district to district. As a matter of fact, out from 79 districts:

- 44 districts do not have any single bee-keeping activity
- 23 districts have less than 10% villages with some bee-keeping activity
- 7 districts have between 10% to 20% villages with some bee-keeping activity, and
- 5 districts have more than 20% villages with some bee-keeping activity.

These figures will need to be further studied for each district on a case by case basis for future bee-keeping development in Afghanistan (Also see Appendix I - Table 13).

2.14. Comparative Status of Vegetable Crops per District between 1978 and 1996

To assess the effect of twenty years of conflict on vegetable production and assess the progress already achieved in rehabilitating and developing this sub-sector.



Main findings:

As reported by the farmers, on the average **31.7% increase in vegetable crop area** is recorded between 1978 and 1996. This figure appears quite high against initial expectations considering the quasi absence of extension support received by farmers during the same period. It is also quite high considering that farmers have limited access to improved vegetable seeds and marketing facilities. This is again revealing of the fact that in spite of an adverse context to promote the production and marketing of perishable vegetable crops, small farmers are giving a higher level of priority to the production of cash crops. This interest for growing vegetable cash crops can be explained by the fact that the number of family members living on the same land holding is in expansion (an average of 9 persons/family has been recorded). Therefore, it makes it compulsory for small farmers to produce higher value cash crops instead of subsistence crops.

Remark: It is also may be for the same reasons that a number of small farmers have engaged in opium poppy cultivation. Under these circumstances and whenever possible the promotion of high value vegetable crops can be seen as an alternative to substitute opium poppy cultivation (Also see Appendix I - Table 14).

2.15. Comparative Status of Vegetable Crop Species between 1978 and 1996

To assess the evolution of vegetable crops production per species, evaluate future production trends and determine future production trends and further support requirements.

Main findings:

NB: It must be remarked that figures about total area under vegetable crops cultivation are slightly different as whether farmers were requested through separate questions to report:

- "Total vegetable crop production area." (see para 2.14-Appendix table 14) or
- "Cultivation area per species" (as is in this para 2.15-Appendix table 15 and table series 23).

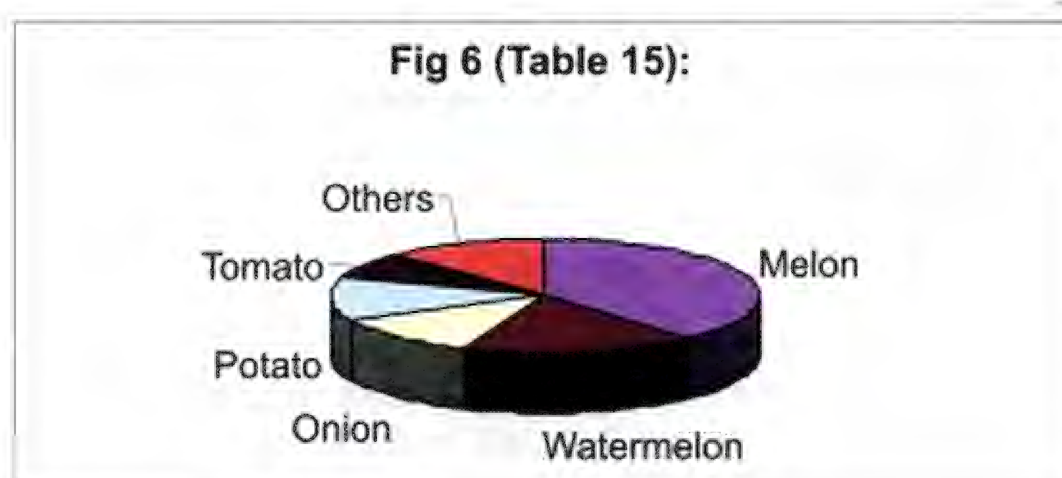
Some level of discrepancy between figures collected from separate questions was inevitable but this was also a very good means to cross check that farmers were reasonably accurate and consistent in their answers. Also as shown below, difference in total figures appeared minimal and as such this is a very good indicator that though areas could not be physically measured, data reported by the farmers were quite reliable.

	1978	**1996**
Total area as per whole village level question (ha.)	58709	77327
Total area calculated from each species (ha.)	58036	76317

Similar to the fruit sector, reported data are also very indicative of a very low level of diversification in vegetable production with only **5 species representing 87.4 % of**

the total area under vegetable cultivation. The top five vegetable crops being melon (38%), followed by watermelon (18%), onion (12%), potato (12%) and tomato (7.4%). These results again show a clear evidence of a lack of awareness on the part of farming communities on the technical and economical advantages of growing and consuming a diversified range of vegetable products to increase their farm income and to improve the nutritional status of their families. Meanwhile, the country has an excellent climate for growing all kinds of vegetable crops and there is a considerable potential to promote vegetable crops production in Afghanistan. Afghan farmers can also be innovative in cultivating new crops if they are confident to find a market for them. In particular, farmers in some districts showed an increasing interest in growing relatively new crops such as cauliflower, okra, as well as some spice crops such as cumin (Also see Appendix I - Table 15).

Fig 6 (Table 15):



2.16. Status of Vegetable Crops Management Practices

To assess the use and evolution of improved crop management techniques for vegetable production (e.g. use of plastic tunnels, chemical fertilizers and control of pests and diseases, etc.) and determine the main problems to be addressed in relation to the rehabilitation and development of vegetable crops production in Afghanistan.

Main findings:

On the average from the 79 surveyed districts, only 18.4 % of the villages used plastic tunnels for early vegetable crop production, 47.2 % used chemical fertilizers, 59.8 % controlled pests and diseases and 29.7 % used "improved" vegetable seeds[3].

The data show that protected cultivation under low plastic tunnels is practiced mostly in the peri-urban districts of main cities and in some other districts cross-border to Pakistan (e.g. in Paktia and Nangarhar provinces). These data also indicate that a limited number of villages used "improved" vegetable seeds as compared to the use

[3] In this particular case "improved" seeds means that these seeds are from a variety known by the farmers, but in most cases varietal purity is very poor.

of chemical fertilizers and controlling pests and diseases. More over, it is observed that farmers make a much larger use of chemical fertilizers and plant protection chemicals on vegetable crops as compared to fruit orchards (Also see Appendix I - table 12).

The limited use of agricultural inputs to increase vegetable crop productivity might be due to a combination of factors that might include:

- A lack of awareness on the part of farmers about propagation techniques for the maintenance of pure vegetable seeds and rational use of other agricultural inputs.
- Difficulties for farmers in having access to quality agricultural inputs at village level. (Also see Appendix I - Table 16).

2.17. Ranking of Problems Associated with Horticultural Crop Cultivation in each district

This question was asked to identify and rank the main problems faced by farmers in relation to horticultural crops cultivation that should be addressed on a priority basis in future programme activities.

Main findings:

As reported, the first most important problem was the lack of irrigation water (problem detailed under para 2.6 and 2.7 and in tables 6 & 7). The second most important problem was the prevalence of diseases followed by insects damages, lack of improved vegetable seeds and fruit varieties, prevalence of noxious weeds, lack of marketing facilities and smallness of farm size per family.

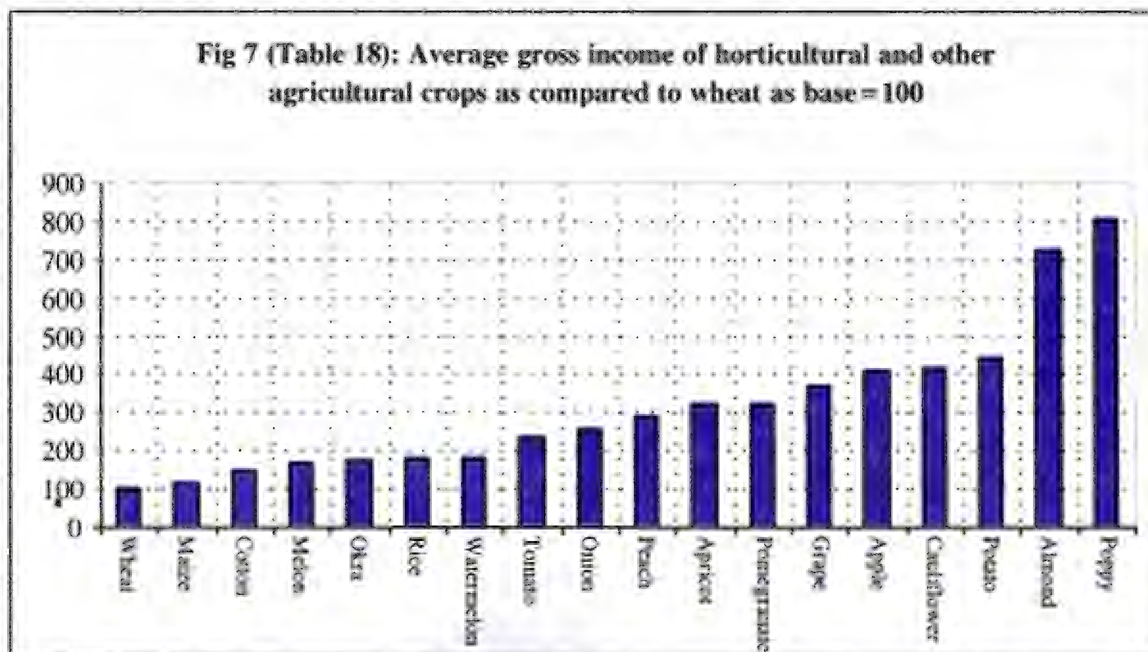
Meanwhile, a further analysis of survey results also indicates that there are some significant differences in the ranking and seriousness of the above problems between the different districts. This needs to be further studied on a case by case basis (Also see Appendix I - Table 17).

2.18 Average Yield and Comparative Gross Income of Horticultural Crops as Compared to other Crops

The purpose was to compare the gross income generated by the main horticultural crops with that of other field crops (including illicit crops) in order to determine possible opportunities for farmers to increase their farm income while substituting illicit crops at the same time.

Main findings

Considering the high level of inflation and rapid fluctuations of exchange rates of the Afghani vs. other currencies, results are presented in comparison to the value of wheat taken as a basis equal to 100.



In general, the gross income generated by horticultural crops is always higher by 2 to 7 times as compared to the gross income generated by wheat and other cereal crops. These data are also confirming the results of a non-field survey[4] of the horticulture sub-sector that was conducted in 1977. It indicated that the gross income generated by horticultural crops was higher by 6.6 to 7 times than that of wheat. It is also important to notice that the gross income generated by opium poppy was 8 times higher than that of wheat. This makes it therefore very doubtful for opium poppy crop substitution programmes to succeed on the long term if these are only based on short-term economical incentives.

It must be noted that these data only refer to the gross income generated by the different crops. Considering that horticultural crops are generally more labour intensive, an analysis based on the comparison of the net income for each crop would certainly be more conclusive. To some extent, an analysis based on a net income comparison would probably reduce the differences recorded between the different crops. Meanwhile, there is some evidence that small land holders will always give their preference to the cultivation of high value horticultural crops (or poppy) since the intensive use of land and family labour remains the only sustainable alternative for them to support their families (Also see Appendix I - Table 18).

2.19. Main locations where Farmers are Marketing Horticultural products

To assess the main marketing locations for horticultural crops in order to facilitate the identification of an adapted strategy and action plan for addressing marketing problems in the future.

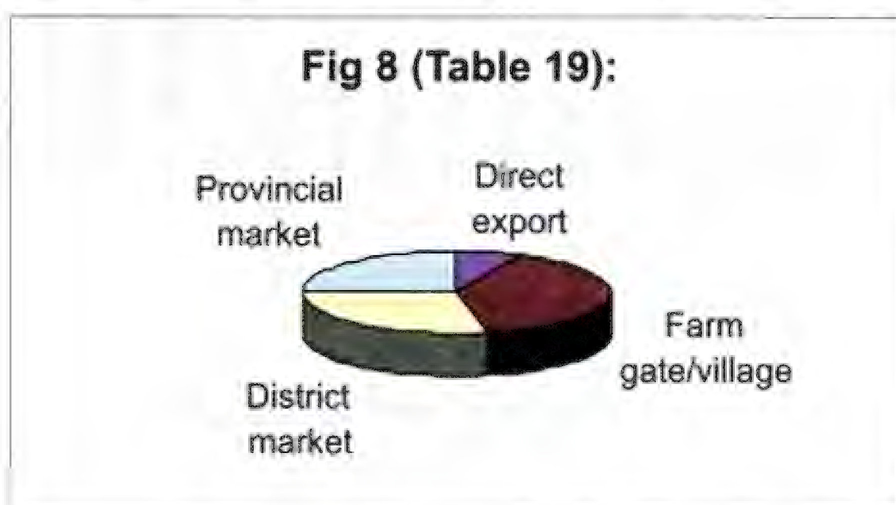
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[4] Report No. 1324-AF
Horticultural Subsector Survey of Afghanistan (Volume II - May 1977)
Agricultural Credit and Agroindustries Division
Projects Department for Europe, Middle East, and North Africa
WORLD BANK

Main findings:

Farmers were asked as to where they market their products on their own. This does not mean that these locations are the final destination of their products which are often re-exported by traders to other markets.

Based on farmers' reports, 39 % of the villages market their horticultural products at farm gate / village level, 29.7 % in district level markets, 24.6 % in provincial level markets and only 6.7 % directly export their products outside of the country.



Survey results also show a great disparity from district to district as whether these are in remote areas or close to cities or borders. In most cases, farmers in remote areas market their products at village or district level. In many cases they also contract their crops to traders. In the case of fruit crops and some other vegetable crops like potato, the crop is often contracted before harvesting based on an estimate of the yield and the trader will take care of the harvesting and packaging process. In this case, farmers have a very limited bargaining power and cannot effectively estimate the actual yield of their crops. Once the contractual agreement has been made with the trader, the farmer also has the tendency to pay a little attention to the management of his crops. A main reason for such a practice is the total absence of marketing system in the country while most farmers do not have transportation facilities to carry out their products to district or provincial level markets.



It is more common for farmers from peri-urban districts to market their products by themselves, in which case they are in a better position to negotiate with different traders and wholesalers. However, these negotiations always take place on an individual basis between the farmer and traders hence, an individual farmer always has a limited bargaining power vs. a group of traders.

Farmers from cross-border districts have a better opportunity to export their products by themselves at a better price, but it appears that they do not take full advantage of this comparative geographical advantage. This may be due to the absence of farmer organizations to market their products (e.g. growers associations or cooperatives)

An exception to these general trends refers to the case of some farmers from Wardak and Logar provinces. These farmers directly export a good part of their production to wholesale markets inside Pakistan.

Considering general trends for a rapid increase of horticulture crops production in Afghanistan with an estimated growth rate of about 5 to 7% per year depending upon species, horticultural products marketing is becoming a crucial issue to be addressed (Also see Appendix I - Table 19)

2.20. Handling, Packaging and Marketing practices

To determine the status of handling and packaging of horticultural products for marketing.

Main findings:

There is no packaging standard for horticultural products in Afghanistan. However, packaging is a very crucial issue as most horticultural products are fragile and highly perishable. Survey results show that an average of 38.3% of the villages pack their horticultural products in jute bags (mostly for tubers, roots and bulbs vegetables); 34.3% in crates (mostly for fruit species and fruit vegetables); 19.6% in baskets (mostly for pomegranate and leafy vegetables); and 7.8% in other materials. However, in many cases due to the lack of adequate packaging materials, any packaging method may be used for any kind of fruit or vegetable products that may cause significant post-harvest losses. Considering the poor quality of roads, the quality of packaging is of paramount importance for horticultural products. Poor roads and the lack of adequate packaging materials are limiting factors to the development of fragile horticultural products such as peach, pear, plum, cherry, tomato, etc. It should however be recognized that there are limited possibilities in addressing these problems within a short or medium term framework of time while solutions need to be found as soon as possible. Under these circumstances, there will be a need to promote alternatives to prevent or reduce post-harvest losses of horticultural products, for example through the promotion of cottage level agro-processing techniques (Also see Appendix I - Table 20).

2.21. Ranking of Marketing Problems of Horticultural Products

To assess and rank the main marketing problems as seen by farmers in order to prioritize future actions to be taken for the promotion of Afghan horticultural products marketing inside and outside Afghanistan.

Main findings:

On the average farmers ranked horticultural marketing problems as follows:

1st	Poor road
2nd	Limited market information
3rd	Product perishability, lack of storage and processing facilities
4th/5th	Lack of farmers cooperatives and limited market bargaining power vs traders.

These data confirm that poor road is an important constraint for the marketing of highly perishable and fragile horticultural crops species that otherwise would have a very production potential in Afghanistan (e.g. peach, pear, plum). Unfortunately, very little can be done to addressed this issue unless a central Government is established with the necessary facilities to rehabilitate the road infrastructure.

Before the war, the Export Department of the Ministry of Commerce used to provide market information to traders and export quality criteria were also established for the main export horticultural products (e.g. raisins). The Agricultural Bank and some cooperatives also provided market information to farmers. These services have been disrupted with the occurrence of war and nowadays, traders and farmers have no access to any kind of centralized market information. Without such market information, there is little possibility for farmers to rationally plan their production. As a result they often refer to previous year market prices to engage in the production of a given crop for the next year. This can lead to high levels of fluctuations with surpluses or deficits in the production and market prices of a given horticultural product from one year to another one and can lead therefore to awkward market situations for the most perishable products. As an example, tomatoes produced in Nangarhar province were sold at the price of about 4000 Afs/kg in autumn 1997 (a "normal" year). This was a very attractive price and many farmers increased their production the following year in 1998 but got a price of only 850 Afs/kg because of market saturation with production surpluses.

In addition, the lack of growers associations and cooperatives makes it difficult for farmers to negotiate with traders on a fair bargaining basis. Beside all these general problems, the presence of front lines has also largely contributed to disorganize traditional market channels. For example, restrictions caused by front lines prevented the export of melons and watermelons from northern Afghanistan to the southern areas and prevented the export of potatoes from central Afghanistan (Bamyan) to Kabul and Kandahar wholesale markets. Therefore, all these issues will need to be addressed in an integrated approach in order to rationalize the whole chain of production, grading, storage, packaging, processing, transportation and marketing of horticultural products (Also see Appendix I - Table 21).

CHAPTER 3: RESULTS AND FINDINGS BY CROPS:

FRUIT SPECIES

3.1 Status of Grape production

Results of the baseline survey in the 79 districts indicate that grape cultivation increased from 33,766 ha. (1978) to 38,190 ha. (1996) though representing an average annual growth rate of 0.73% of the area under cultivation during that period. Therefore grape is the first fruit species being produced with 48.40% of the total fruit growing area of the 79 surveyed districts.

Considering both the replacement of old vineyards and the planting of new ones, the average replanting rate has been of 1.22% of the total area per year from 1981 to 1990 that increased to 3.08% from 1991 to 1996.

Meanwhile, these figures are fluctuating significantly from district to district. It is interesting to mention that in 1996 the area under vineyards in 3 districts of Kandahar namely Arghandab, Shah Walikot and Panjwai was covering a total of 20829 ha. that represents 54,54 % of the total vineyard area in the 79 surveyed districts. This area is particularly well known for the production of seedless grape varieties (named "kismish") for drying into raisins for export markets. This activity has been badly affected in the course of the war with the destruction of a high number of grape drying houses ("kismish khanas"). This explains that many farmers are still selling their production as fresh grapes but with a lower benefit since local fresh markets are saturated at the time of grape harvesting.

Survey results also show that there was a vineyard area increase in 43 districts, a decrease in 31 districts while it remained unchanged in 2 districts (Charkh/Wardak and Nirkh/Wardak). No vineyard was recorded in 3 other districts (Anar Dara/Farah; ImamSahib/Kunduz and Mizan/Zabul). As reported by farmers, the average yield of grape is largely fluctuating between the different districts. The lowest 1470 kg/ha in Sherzad district (this very low yield is mostly due to the traditional practice of growing very old grapes vines on old trees as natural supports and without any kind of management) to a maximum of 30765 kg/ha in Bagrami. It averages from about 9000 to 18000 kg/ha in the main grape growing areas of Kandahar province.

Survey results also indicate that the average sale price of grape at farm gate or on local markets varied considerably between the surveyed districts from about 0.08 US$/kg in Khulm district to 0.66 US$/kg in Qadis district. It was averaging 0.20 to 0.25 US$/kg in the main grape production areas of Kandahar province.

In comparison to the gross income generated by wheat crop in each respective district, the gross income generated by grape was reported as 3.7 times higher on the average (see table 18). Income was also reported lower in a few districts where grape is not cultivated for commercial purposes but mainly for family self-consumption. Large variations are also observed between the different districts with respect to the gross income being generated per unit of area. Hence we may eventually suspect that in this particular case there might have been some level of

It also appears that on the average, 9.9% of the arable land, and 16% of the irrigated land were used for horticultural crops cultivation in 1996 as compared to 6% and 12% respectively in 1977. These figures are therefore indicative of the increasing role being played by horticultural crops in the rural economy. Between 1977 and 1996 there has been an increase of 18% of the area under fruit orchards and grape vineyards and an increase of 31.7% of the area cultivated under vegetable crops. At the end of 1996, 20.8% of orchards and vineyards were less than 5 years old, 20.1% between 6 and 15 years old and 59.1% more than 15 years old. This represents a replanting rate of about 4 to 5% of the total orchard and vineyard area every year that is again very indicative of the increasing dynamism of the horticultural sector in the course of the last years. The results of the survey were however indicative of a very low level of crop diversification. More precisely, 95.9% of the fruit orchard and vineyard area is planted with only 5 different fruit species which are grape (48.4%), almond (19.6%), apricot (12.9%), apple (7.8%), and pomegranate (7.2%). Similarly, 87.4% of the total vegetable crop area is represented by only 5 species that are melon (38%), watermelon (18%), onion (12%), potato (12%), and tomato (7.4%).

The management of horticultural crops also remains at a very low technical standard. In fruit orchards and grape vineyards only 28.1% of farmers practice pruning, 21.4% control pests and diseases, 11.3% use chemical fertilizers and 11.1% use improved budded cultivars. In the case of vegetable crops, farmers' awareness and knowledge in intensive crop management practices appear at a slightly higher standard. However, it was reported that only 59.8% of farmers are controlling pests and diseases, 47.2% using chemical fertilizers and 29.7% using "improved" seeds. Only 18.4% of villages have at least one progressive farmer using low plastic tunnels for the production of early vegetable crops under protected cultivation. It is noticeable that farmers are generally paying more attention to the management of short cycle crops such as vegetables as compared to fruit orchards. This can be explained by the fact that vegetable crops generate earlier economical returns on the initial capital investment as compared to fruit species. This somehow comes into contradiction with the fact that on the longer term, economical returns per unit of cultivated area are generally higher with fruit orchards. Though with some fluctuations depending upon species, it was recorded that the gross income per unit of fruit orchard area was from 3 to 7 times higher as compared to that of wheat while it was 2 to 4 times higher for vegetable crops. It is also worth to mention that the gross income generated by opium poppy cultivation based on a reported yield of 70 kg/ha was recorded as 8 times higher than that of wheat. This reported yield of opium poppy may appear on the higher side as compared to yields reported by other surveys (UNDCP national surveys generally record yields of about 45 kg/ha). This could eventually be explained with the fact that this survey took place in a selection of districts where horticultural crops are somewhat more developed and therefore in generally more fertile areas as compared to other poor districts where opium poppy is also cultivated. These results therefore strongly suggest that there is no obvious cash crop alternative to substitute opium poppy cultivation.

Another limiting factor to the development of horticultural crops is the poor level of post-harvest practices. The highly perishable nature of most horticultural products associated to poor grading practices, absence of cold storage facilities, lack of adequate packing material and total absence of farmers' organizations to market

inaccuracy in farmers' response. These variations can eventually be explained also by after various factors relating to cultivation methods, yield, local market demand, market accessibility, comparative advantage/disadvantage vs. other crops. Instability in market prices was also very much the consequence of the destruction of a high number of grape drying houses, hence obliging a number of farmers to sell their production as fresh grape all at the same time in the season (Also see Appendix - Table 22.1).

3.2 Status of Apple Production

Results of the baseline survey in the 79 districts indicate that apple cultivation increased from 3581 ha. (1978) to 6190 ha. (1996), therefore representing an average annual growth rate of 9.6% of the area under cultivation during that period. This is extremely high and in large excess to the necessary requirements to replace and rejuvenate old apple orchards. With such a growth rate, apple is now ranking as the 4th most important fruit species before pomegranate while it was the 5th before the war. However, considering both the replacement of old apple orchards and the planting of new ones, the average planting rate has been of 3.15% of the total area per year from 1981 to 1990 and increased to 7.06% per year from 1991 to 1996 (Also see table 11).



Apple orchard distribution amongst the 79 surveyed districts appears somehow more regular throughout the country as compared to some other fruit species. Meanwhile, 3 districts (Nirkh, Sayedabad, and Chak) located in Wardak province are representing 30% of the total apple orchard area in the 79 districts and more than 50% of the total apple orchard area is still concentrated in only 8 districts.

Survey results also indicate that the apple orchard area increased in 49 districts, remained unchanged in 3 districts, decreased in 19 districts, while it was not cultivated in 7 districts but this is mostly due to agro-ecological conditions (low

elevation warm districts) that are not favorable to apple growing. It must also be noted that apple orchards suffered a lot from war damages in some particular districts with result that 13 districts have still an apple orchard area that is more than 20% below pre-war status.

Though farmers do not keep accurate accounts of their yields, their reports point out average yields ranging from 1820 kg/ha in SangCharak (Jawzjan) and Murghab (Badghis) districts to more than 38000 kg/ha in MohammadAgha (Logar) district. In Wardak province districts where the apple industry is already quite developed, average yields are ranging from 12000 to 19000 kg/ha.

Based on farmers reports, average sale prices of apples at farm gate or on local markets ranged from 0.06 US$/kg in Khulm (Samangan) district to 0.51 US$/kg in Almar (Faryab) district. In Wardak province main apple growing areas, apples were sold from 0.12 US$/kg at farm gates to 0.22 US$/kg depending on quality and yearly market fluctuations which is also largely influenced by export taxation. In 1997, Pakistani customs authorities imposed a 300 Pak.Rupees import tax on each apple crate (35kg), equivalent to 0.19 US$/kg while Taliban authorities also imposed local taxes on each truckload. This new taxation therefore led to a total disruption of apple exports from Afghanistan to Pakistan in 1997 and a dramatic collapse of apple market prices inside Afghanistan.

Otherwise, under stable market conditions, the average gross income generated by apple was reported as 4.12 times higher (see table 18) in comparison to the gross income generated by wheat crop in each respective district. As for most other horticultural crops, large variations can also be observed between the different districts with the gross income being generated by apple orchards, the cause of which would need to be further investigated (Also see Appendix - Table 22.2)

3.3 Status of Apricot Production

Apricot orchards area countrywide increased from 8292 ha. (1978) to 10164 ha. (1996) which represents an average area growth rate of 22.6% over eighteen years and therefore an average growth rate of 1.25% per year. The apricot orchard area ranks 3rd after grape and almond.

While analyzing the current status of apricot orchards per range of age (see table 11), it can be seen that 25.9% of orchards were less than 5 years old, 29.1% from 6 to 15 years and 45% more than 15 years at the time of the survey. In other words, this means that considering both the replacement of old orchards and establishing of new ones, the average planting rate has been 2.91% of the total area per year from 1981 to 1990 and increased to 5.18% per year from 1991 to 1996 (see table 11). The growth rate in apricot orchard area is likely to continue to increase for some years more as Afghan farmers continue to show an increasing enthusiasm for the production of dried apricots for export.

At the time of the survey, more than 50% of apricot orchards were still concentrated in about 10% of the districts. It is however interesting to mention that a number of fruit tree nurseries are currently under production with a high percentage of apricot

tree saplings. Therefore, considering that apricot trees can be grown in an extended number of districts, a more regular distribution of apricot production inside the country can be expected in the coming years. From the 79 surveyed districts, it was also found that the apricot orchard area increased in 45 districts remained unchanged in 1 district and decreased in 32 districts while 1 district (Qarabagh/Kabul) had no apricot orchard.

Survey results also indicated that apricot orchard yields varied from 1155 kg/ha in Sherzad/Nangarhar district to a maximum of 23,450 kg/ha in Baraki Barak/Logar district. The average yield in main apricot growing areas is of about 7000 kg/ha. Average sale prices at farm gate for fresh apricots also varied from about 0.05 US$/kg in Jaghuri/Ghazni district to 0.70 US$/kg in Mizan/Zabul district while the average sale prices was of about 0.18 to 0.20 US$/kg in main apricot growing areas. It is worth to mention that on Pakistan retail markets, premium quality dried apricots graded and packed according to export standards can be sold at a price up to 3 US$/kg that is equivalent to about 0.75US$/kg for fresh apricots. Therefore, there is a considerable potential to increase the value-added of the product through improved production, processing and marketing practices. In 1996, the average gross income generated by apricot orchards ranged from 141 US$/ha. in Dand/Kandahar (mostly young trees) to 5116 US$/ha in Saighan/Bamyan district while it averaged about 1200 US$/ha in main apricot growing areas. In some districts the gross income value appeared lower as compared to that of wheat which was mainly due to the remoteness of the districts from consumer markets and to the use of poor yielding and poor quality local varieties. Otherwise, the average gross income per hectare of apricot orchard in the 79 districts was reported as 3.2 times higher than that of wheat (see table 18).

Therefore, apricot is certainly one of the fruit species which has the highest potential for development in Afghanistan in the coming years. The reasons are:

- Farmers are already familiar with apricot production.
- Afghanistan is rich in indigenous apricot genetic resources of excellent quality.
- Apricots can easily be dried. This is a comparative advantage in the context of Afghanistan as compared to other perishable crops.
- There is good potential to increase the value-added of the product through improved production, processing and marketing practices.
- There is a high level of demand for dried apricots on export markets.

(Also see Appendix - Table 22.3)

3.4 Status of Almond Production

Based on farmers' reports, it appears that the average almond orchard area increased from 9551 ha. (1978) to 15493 ha. (1996), thus representing a 62.2% area increase equivalent to an annual growth rate of about 3.45% per year. This makes almond ranking as the 2nd most important fruit crop after grapes.

Considering the status of almond orchards per range of age (see table 11), it appears that 21.3% of orchard area is less than 5 years old, 28.4% from 6 to 15 years old and 50.3% more than 15 years old. As a result, considering both the replacement of old and establishing of new orchards, the average planting rate has been equal to 2.84% per year from 1981 to 1990 and increased to 4.26% per year from 1991 to 1996.

Out of 79 surveyed districts, the almond orchard area increased in 41 districts, remained unchanged in 3 districts and decreased in 15 districts while no almond was produced in 20 districts. It is also interesting to mention that most of the production area is concentrated in a few number of districts while more than 50% of orchards are located in 4 districts and 35% only in Arghandab and Mizan districts of Zabul province.

Almond orchard yields have been reported as fluctuating from 210 kg/ha. in Shiring Tagab (Faryab) district to 9975 kg/ha in Baraki Barak (Logar) district while it averaged about 3600 kg/ha. in main almond growing areas of Zabul province.

Average sale price of almonds at farm gate or on local markets fluctuated from 0.15 US$ in Mehterlam (Laghman) district up to 4.7 US$/kg in Deh Dadi (Balkh) district while it averaged about 0.5 US$/kg in main almond growing areas of Zabul province.

Gross income generation per hectare of almond orchard was also reported to largely fluctuate from 505 US$/ha in Nirkh (Wardak) district up to 5106 US$ in DehDadi (Balkh) and Jurm (Badakhshan) districts and it averaged 1700 US$ in main almond growing areas of Zabul province. Based on these figures, almond also appeared to generate an average gross income 7.2 times higher than that of wheat (see table 18).

Beside general orchard management and other marketing problems (see table 21), the large fluctuations in prices and income generation that have been reported between districts can be easily explained with the fact that most old almond orchards were established with local seedling varieties. These old orchards are kept with little managerial care while new orchards are generally established with a selection of quality budded varieties.

There is therefore still a large potential for further development of almond production in Afghanistan for the following reasons:

- Most Afghan farmers are already familiar with almond trees and receptive to learn improved production practices;

- Afghanistan is keeping a lot of indigenous almond genetic resources of excellent quality (both hard shell and soft shell) that need to be rationally exploited.

- Agro-ecological conditions allow almond production to be developed in a wider number of districts, though late flowering varieties need to be

selected for growing in higher elevation areas to prevent spring frost damages;

- Almond being a nut, it is much easier for farmers to manage its storage and transportation to markets, that is a significant comparative advantage to other horticultural crops;

- There is a good demand for quality almonds on export markets (Also see Appendix - Table 22.4)

3.5 Status of Peach Production

The peach production area is ranking on 6th position after grape, almond, apricot, apple and pomegranate, and accounts only for 1.9% of the total fruit orchard area in the 79 surveyed districts. Meanwhile, the total area under peach orchards was reported to have increased by 38.3% from 1046 ha. (1978) to 1447 ha. (1996), hence representing an equivalent average growth rate of 2.13% per year. However, it must be observed that the actual peach orchard area recorded through this survey is probably below actual figures. The main reason is that farming families are very commonly keeping a few number of peach trees inside their family garden for home consumption without being mentioned during survey data collection.

With reference to the average age of trees (see table 11), it appears that 40.7% of peach orchards were less than 5 years old, 33.8% from 6 to 15 years old, and only 25.5% more than 15 years old. Peach orchards are therefore the "youngest" as compared to all other fruit species in Afghanistan with an average replanting/rejuvenation rate of more than 8% of the total orchard area every year during the last five years.

The peach production area also increased in 42 districts, remained unchanged in 4 districts and decreased in 16 districts while no peach was grown in 17 districts. It is also worth to mention that peach orchards in Dand (Kandahar) district have been totally destroyed and none was yet reestablished at the time of the survey. Otherwise, it is also interesting to remark that unlike other fruit species, peach production is better distributed geographically throughout the country. Districts with the highest production areas have been recorded in ShakarDara/Kabul (central/eastern Afghanistan), Arghandab/Kandahar (southern Afghanistan), Rustaq/Takhar (north/eastern Afghanistan), Qadis/Badghis (north/western Afghanistan) and DehDadi/Balkh (northern Afghanistan).

Although peach can easily be grown in a number of districts, the development of commercial orchards remains limited due to the fragile and perishable nature of the product that makes it difficult to market. As a consequence, the average gross income from peach production was reported at the level of 1,424 US$/ha. which is the lowest income value as compared to other fruit species but still remains about 2.9 times higher as compared to that of wheat.

It is therefore obvious that peach has a very large potential for development in Afghanistan. The main limiting factor is the perishability of the product that makes it

difficult to market under the prevailing situation mainly due to poor roads, lack of cold storage and lack of processing facilities (Also see Appendix - Table 22.5).

3.6 Status of Pomegranate Production

The pomegranate production area is ranking 5th after grapes, almond, apricot, and apple and increased by 3.6% from 5469 ha. (1978) to 5667 ha. (1996). This represents a rather low average growth rate of only 0.2% per year, that is the lowest of all main fruit species. With reference to the age of pomegranate orchards (table 11), it was observed that 24.7% were less than 5 years old, 16.8% from 6 to 15 years old, and 58.5% more than 15 years old.

It was also observed that the pomegranate orchard area increased in 27 districts, remained unchanged in 4 districts and decreased in 19 districts while there was no pomegranate orchard in 30 districts.

It is interesting to mention that pomegranate production is very much concentrated in a few districts. Out of 79 surveyed districts, 72,8% of the pomegranate production area is concentrated in only 6 districts. For example, in Kandahar province where 3 districts were representing 49.7% of total pomegranate planted area, Arghandab district representing alone 31%. Pomegranate orchards are also important in Tagab district of Kapisa province where they represent 12% of total surveyed area.

Pomegranate orchards yields are reported to fluctuate largely from district to district. This is mostly due to differences in varieties and orchard management practices. Local varieties in the main pomegranate production area of Kandahar province are famous for their high quality and productivity. Farmers reported average yields ranging from about 8600 kg/ha in Dand district to more than 19000 kg/ha in Arghandab district. In Tagab district of Kapisa province, local varieties are producing fruits of smaller caliber and farmers reported much lower yields with only 2800 kg/ha.

Also due to these large differences in quality between local varieties, market prices at farm gate are also largely fluctuating. Even inside the same Kandahar province, farm gate prices ranged from 0.09 US$/kg in Dand district to 0.41US$/kg in Arghandab district while it was reaching up to 0.50 US$ on Kandahar retail markets. In consequence, the gross income generated by pomegranate orchard was also very variable. It was reported as being equal to almost 8000 US$/ha in Arghandab district of Kandahar province while it remained at about 1300 US$/ha in the neighboring districts of Panjwai and Shah Wali Kot. It must also be noted that pomegranate fruit splitting and damages caused by fruit borers are common seasonal problems that can largely affect the yield and marketable value of the production from one year to another. Meanwhile, on the total average, farmers reported the gross income generated by pomegranate orchards as 3.2 times higher as compared to that of wheat crop.

In general, Afghan pomegranate varieties and particularly those grown in the Arghandab district of Kandahar province are probably amongst the best in quality from all over the world. Therefore, with some improvement in pomegranate orchard management practices and with a better fruit handling/packaging and organization of

marketing channels focussing on middle-east markets, it is likely that Afghan pomegranate production could be further developed in a wider range of districts, and with a much higher income value for farmers (Also see Appendix II.1 - Table II.1.6).

VEGETABLE SPECIES

3.7 Status of Potato Production

Based on farmers' reports, potato production area increased by 78.4% from 5123 ha. (1978) to 9138 ha. (1996) in the 79 surveyed districts. This represents an average growth rate of about 4.36% per year that is the highest growth rate amongst the main cultivated vegetable crops. With 12% of the area cultivated with vegetable crops, potato is ranking as the 3rd most important vegetable at almost equal level with onion (9159 ha in 1996) after melon (1st) and watermelon (2nd).

Survey results also indicate that the potato crop production area increased in 57 districts, remained unchanged in 1 district, and decreased in 9 districts while it was not cultivated in 12 districts. Potato production appears to have a more regular geographical distribution as compared to other vegetable crops though main production areas remain concentrated in the central highlands and in the Kabul region. This can be explained in relation to the importance of potato crop production for food security.

Potato crop yields were also reported from about 2 tons/ha in Nawzad (Helmand) district up to about 32 tons/ha in Charkh (Logar) district. From the overall 79 surveyed districts, farmers reported an average yield of about 15 tons/ha that is a much higher yield as compared to a very low 4.6 tons/ha[5] to 10.5 tons/ha[6] at national level in 1976. Meanwhile, as compared to standard yields observed in advanced countries (>40 tons/ha), there is still a very good potential for progress but main constraints are the lack of adapted varieties for the various agro-ecological conditions of Afghanistan and the lack of disease-free tuber seeds. Due to the absence of tuber seed production schemes, most potato growers use their own produce as a source of seed without following the basic principles required to produce quality tuber seeds. Through such a practice, farmers are unknowingly contributing to the propagation and expansion of tuber seed borne diseases, hence considerably reducing the yield of their potato crops.

Meanwhile, though tubers produced are of an irregular quality, market prices of potatoes are relatively attractive for Afghan farmers. Farm gate prices are ranging from 0.07 US$/kg in Keshem/Badakhshan district up to 0.29 US$/kg in Helmand/Nawzad district. The gross income generated per unit of cultivated area appears to be 4.42 times higher on the average to that of wheat.

Considering that farmers are showing a considerable interest in potato crop production both for food security and cash income generation, the area under potato crop cultivation is likely to expand on continuous basis in the coming years. It is

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therefore quite important at this juncture to take actions to improve the production potential of potato crop, mainly through the selection of adapted varieties, the establishment of quality tuber seed production schemes and training of farmers on improved potato crop production practices (Also see Appendix - Table 23.1).

3.8. & 3.9. Status of Melon and Watermelon Production

Melon and watermelon are the first and second vegetable crops grown in Afghanistan. Based on farmers' reports, the area under melon production in the 79 surveyed districts increased by 18.3% from 24534 ha. (1978) to 29021 ha. (1996). This represents an average growth rate of about 1% per year and the area under watermelon production increased by 19.3% from 11495 ha. (1978) to 13709 ha. (1996), also representing an average growth rate of about 1% per year.

Therefore, in 1996, melon represented 38% and watermelon 18% (hence a total of 56%) of the total area under vegetable crops cultivation in the 79 surveyed districts.

The melon production area increased in 36 districts, remained unchanged in 1 district and decreased in 8 districts while it was not cultivated in 34 districts. Similarly, watermelon production area increased in 41 districts, remained unchanged in 1 district, decreased in 11 districts and was not cultivated in 26 districts. Out of 79 surveyed districts, 79% of melon production and 69% of watermelon production area were concentrated in only 6 districts located in the northern region of the country.

Average yields in the main producing areas were reported as ranging from 3 to 15 tons/ha for melon and 3 to 20 tons/ha for watermelon. It must be noticed that melon and watermelon are for a good part produced on rainfed land in the northern areas of the country that explains these large fluctuations in yields.

Average sale prices were also largely fluctuating from 26 US$/ton in SangCharak (Jawzjan) district to 226 US$/ton in Chareh (Uruzgan) district for melon and from 19 US$/ton in Rustak (Takhar) district to 136 US$/ton in Enjil (Herat) district for watermelon. In 1976, it was estimated that Afghanistan was exporting about 35000 tons of melons annually, 99% of which to Pakistan. Due to the presence of frontlines between the northern region to the southern region of Afghanistan at the time of the survey, traditional marketing channels were disrupted and prices dropped much below their normal standards. Meanwhile, in spite of that particular situation, it appeared that on the average the gross income generated from melon and watermelon production was 1.65 and 1.80 times higher than that of wheat production respectively. However, it is estimated that melon and watermelon have the potential to generate a gross income 3 to 4 times higher than that of wheat under normal marketing conditions (Also see Appendix - Table 23.2 and 23.3).

3.10. Status of Onion Production

In the 79 surveyed districts, the onion production area increased by 52.4% from 6008 ha. (1978) to 9159 ha. (1996). Therefore, onion comes as the 3rd most important vegetable crop after melon and watermelon and is almost equal to potato with 12% of the total vegetable crop area.

The area under onion cultivation increased in 66 districts, decreased in 12 districts and was not mentioned in only 1 district (BalaBuluk/Farah). Therefore, onion is cultivated in almost all the surveyed districts, mostly as a cash crop for the local market and export. Together with tomato, onion appears to be one of the most widespread vegetable crops throughout the country.

Afghan farmers and consumers particularly appreciate local red onion varieties mostly for their stronger taste, higher dry matter contents and good storage capacity. However, onion being a cross-pollinated crop, varietal purity is often very poor and the production is very heterogeneous in quality. Based on farmers' reports, yields are ranging from 2.6 tons/ha in Saghar (Ghor) district up to 31 tons in Nahr-e-Saraj (Helmand) district while the average yield throughout the 79 surveyed districts is 12 tons/ha. As a comparison, average yields in advanced countries are generally higher than 40 tons/ha. Poor crop management practices associated to poor varietal purity are the main reasons for the lower yields reported in Afghanistan. It is also worth mentioning that in general, the lowest yields are obtained in districts where farmers are practicing direct sowing through seed broadcasting instead of transplanting onion seedlings previously produced in nurseries. The structure of soils in Afghanistan is rather poor while onion seeds are very small and slow to germinate and emerge. This makes weed control more difficult. It is therefore reasonable to anticipate that with the use of purified varieties and with better soil preparation and seedling husbandry practices, there is a potential to at least double the current average yield of onion crops in Afghanistan. In addition, the promotion of early varieties with early onion seedling production under protected cultivation and early transplanting, would considerably reduce the duration of the crop cycle on the field, eventually allowing a double cropping pattern in medium elevation areas.

Also thanks to a good capacity for storage and transportation, most farmers see onion as a very reliable cash crop. Farmers reported farm gate prices ranging from 0.03 US$/kg in Bagram (Parwan) district to 0.29 US$/kg in Arghandab (Qandahar) district. The average farm gate price throughout the 79 surveyed districts was equal to 0.09 US$/kg. On the average, the gross income generated by onion crop per unit of area also appeared 2.5 times higher to that of wheat(Also see Appendix - Tables 18 and 23.4).

3.11. Status of Tomato Production

Tomato production area increased by 32.6% from 4284 ha. (1978) to 5682 ha. (1996) in 79 surveyed districts. Therefore tomato comes as the 5th most important vegetable crop after melon, watermelon, onion, and potato with 7.4% of the total vegetable crop area.

The tomato production area has also increased in 65 districts, decreased in 11 districts and was not mentioned in only 3 districts. Tomato crop is cultivated in most of the surveyed districts and together with onion appears to be one of the most widespread vegetable crops throughout the country. Yields were reported as ranging from 2.5 tons/ha in Saghar (Ghor) province to 25 tons/ha in Chak (Wardak) province. The average yield throughout the 79 surveyed districts was about 10 to 11 tons/ha. These yields are obtained with bush type varieties of poor varietal purity and without

any type of staking or training of the plants. Plant protection measures and fertilization are also very poor. As a comparison, average yields for industrial tomatoes (e.g. Roma variety type without plant staking and training) in advanced countries are generally higher than 30 tons/ha. In Afghanistan, yields can also be reduced by higher summer temperature affecting the fruit setting in the warmest areas. Marketable yields are also often affected by excessive solar radiation and water stresses causing physiological damages such as sun scald and blossom end rot.

Given the highly perishable nature of fresh tomatoes, this crop is mostly produced for the supply of the local or regional markets. As a result, market prices are subject to a wide range of fluctuations depending upon the local demand in the course of the season and depending also on the variations of production from one year to another. Farm gate prices for seasonal tomato have been reported from 0.03 US$/kg in Rustak (Takhar) district to 0.21 US$/kg in Shah Jui (Zabul) district. Average price in the 79 surveyed districts was of about 0.10 US$/kg. On the average, the gross income generated by tomato crop per unit of area also appeared 2.33 times higher to that of wheat (see table 18).

There are therefore some good technical opportunities to improve both production and marketing of tomatoes. Given the high level of seasonal fluctuations in market prices, the selection of early varieties together with the production of early seedlings under protected cultivation would certainly contribute to regulate market supply and somewhat stabilize market prices. This would also allow an increase of the gross income per unit of area. The promotion of protected cultivation techniques could also contribute to the extension of tomato production to higher elevation areas, particularly in the central highlands where its development is still limited. There would be also some good scope for promoting the production of industrial tomatoes for processing, especially drying in remote areas where there is no access to fresh markets (Also see Appendix - Table 23.5).

3. 12. Status of Okra Production

Okra production area increased by 67.2% from 1561 ha. (1978) to 2610 ha. (1996) in 79 surveyed districts. Therefore, okra comes as the 6th most important vegetable crop after melon, watermelon, onion, potato and tomato but only with 3.4% of the total vegetable crop area. This indicates the low level of diversification in vegetable crops production in Afghanistan.

Okra production area also increased in 54 districts, remained unchanged in 1 district, decreased in 5 districts and it was not mentioned in 19 districts. Okra also appears being cultivated mostly in eastern Afghanistan and to a lesser extent in the southern/western region of Afghanistan while its development in the northern regions is still quite limited. For the time being, okra is produced only for the supply of local markets. However, based on recent year's trends, it is observed that Afghan farmers and consumers show an increasing interest in this crop. Okra is also a relatively easy crop to grow as it does not show too many pest and disease problems in Afghanistan. Okra cultivation is therefore expected to continue to expand in area and to a larger number of districts in the forthcoming years.

their products significantly contributes to high levels of post-harvest losses and low commercial value of horticultural products.

Conclusions:

Afghan farmers are showing an increasing interest in cash crop production from which they find a comparative economical advantage on the production of traditional subsistence crops. Horticultural crops are in a strong position to support food security and the rehabilitation of Afghan rural economy because:

- Most Afghan farmers are already familiar with horticultural crops and are very receptive to innovative extension messages when their immediate interest is obvious;
- Horticultural crops represent a wide range of species that can be grown in the wide range of agro-ecological zones inside the country and during an extended period of the year if crops are cultivated under protected cultivation (e.g. low plastic tunnels)
- Horticultural crops production is land and labour intensive, that is an advantage for small landowners with large families;
- Horticultural crop cultivation is a high income generating activity requiring a limited capital investment, that is an advantage for poor farmers and share croppers;
- Horticultural crops are relatively "water-efficient" (high income generation per unit of irrigation water consumed), that is an advantage in Afghanistan where water is a limited resource;
- Horticultural crops include a wide range of short cycle crops (vegetables) and perennial crops (fruit and nuts), the combination of which (e.g. inter-cropping vegetables in orchards) is making horticulture-based farming systems very sustainable;
- Peri-urban horticultural crop production contributes to create job opportunities for urban and peri-urban populations while it contributes at the same time to the alleviation of poverty and malnutrition in urban areas;
- Cottage industry processing of horticultural products generates income for women and additional income for families;
- There is a high demand for a wide range of horticultural products on regional export markets.

Therefore, under the current context of Afghanistan, horticultural crops are benefiting from a number of opportunities and comparative advantages on most other agricultural crops (at the exception of opium poppy that reportedly remains the most remunerative crop per unit of area). In spite of very traditional and conservative

Yields were reported as ranging from 1.75 ton/ha in Khas Uruzgan (Uruzgan) district to 24.5 tons/ha in Qarabagh (Kabul) district. The average yield throughout the 79 surveyed districts was equal to about 6.7 tons/ha. Local market prices were reported to fluctuate from 0.04 US$/kg in Khas Kunar (Kunar) district up to 0.36 US$ in Sholgara (Balkh) district with an average of 0.13 US$/kg. Therefore, it also appears that the average gross income generated by okra crop is about 1.76 time higher to that of wheat.

Considering the perishability of this product, okra is mostly produced for local fresh market supply, not much as an export cash crop. As a result, market prices remain relatively low. However there would be some opportunity to promote the production of dried okra for export. This could provide an opportunity for expanding okra production in remote districts (Also see Appendix - Table 22.6).

APPENDICES

List of Appendices – Tables

Table1: Demography and family status

Province	District	Number of villages in the district	Total number of families in 1978 in the district	Total number of families in 1996 in the district	% decrease / Increase in family number from 1978 to 1996	Average size of family	Estimate district population in 1996	Total number of widow families in the district	% widow families in the district
Kabul	Bagrami	109	9,371	9,319	-0.6	8	74,552	1,325	14.2
Kabul	Shakar Dara	83	7,817	7,722	-1.2	8	61,776	2,195	28.4
Kabul	Mir Bacha Kot	91	6,630	7,125	7.5	8	57,000	634	8.9
Kabul	Qarabagh	54	3,256	4,034	23.9	7	28,238	468	11.6
Kapisa	Tagab	96	3,704	5,207	40.6	8	41,656	686	13.2
Kapisa	Nijrab	123	7,247	9,658	33.3	7	67,606	342	3.5
Parwan	Ghorband	112	7,578	8,490	12	9	76,410	418	4.9
Parwan	Bagram	68	4,156	4,961	19.4	7	34,727	631	12.7
Wardak	Nirkh	109	3,118	3,763	20.7	12	45,156	283	7.5
Wardak	Chak	201	4,701	8,167	73.7	11	89,837	515	6.3
Wardak	Sayedabad	158	8,696	11,953	37.5	10	119,530	1,276	10.7
Logar	Baraki	143	5,997	7,688	28.2	10	76,880	1,107	14.4
Logar	Khoshi	63	2,202	1,487	-32.5	10	14,870	339	22.8
Logar	Charkh	65	2,739	3,323	21.3	11	36,553	517	15.6
Logar	Muhammad Agha	55	9,715	7,585	-21.9	11	83,435	1,643	21.7
Ghazni	Jaghuri	184	12,554	19,606	56.2	9	176,454	820	4.2
Ghazni	Qarabagh	173	8,019	10,843	35.2	11	119,273	1,146	10.6
Paktika	Sharan	96	2,100	3,091	47.2	15	46,365	230	7.4
Paktika	Urgun	88	3,628	3,564	-1.8	12	42,768	628	17.6
Paktia	Mandozai	61	2,618	3,542	35.3	10	35,420	611	17.3
Paktia	Nadir Shah Kot	60	2,744	3,905	42.3	13	50,765	667	17.1
Paktia	Zurmat	117	6,481	4,786	-26.2	18	86,148	908	19
Nangarhar	Sorkh Rod	89	6,814	5,190	-23.8	7	36,330	671	12.9
Nangarhar	Behsud	91	5,697	5,488	-3.7	7	38,416	541	9.9
Nangarhar	Hesarak	53	2,644	4,071	54	10	40,710	709	17.4
Nangarhar	Khogiani	88	8,738	8,783	0.5	8	70,264	651	7.4
Nangarhar	Sherzad	77	2,093	3,759	79.6	10	37,590	464	12.3
Laghman	Mehtarlam	117	6,577	7,758	18	9	69,822	1,224	15.8
Laghman	Qaraghayi	73	4,329	6,861	58.5	8	54,888	1,659	24.2
Laghman	Alingar	171	7,764	14,668	88.9	8	117,344	2,376	16.2
Kunar	Khas Kunar	39	3,524	2,431	-31	8	19,448	455	18.7
Kunar	Chawkai	69	5,324	3,096	-41.8	9	27,864	288	9.3
Kunar	Nur Gul	41	4,595	4,181	-9	8	33,448	515	12.3
Badakhshan	Jurm	102	5,938	7,291	22.8	11	80,201	1,270	17.4
Badakhshan	Baharak	104	2,824	4,359	54.4	8	34,872	611	14
Badakhshan	Keshem	146	7,737	9,800	26.7	6	58,800	610	6.2
Takhar	Rustaq	118	8,169	10,460	28	8	83,680	1,248	11.9
Takhar	Farkhar	88	4,862	6,140	26.3	6	36,840	156	2.5
Baghlan	Pul-e Khumri	81	3,971	5,177	30.4	8	41,416	528	10.2
Baghlan	Nahrin	91	3,569	4,815	34.9	8	38,520	474	9.8
Baghlan	Anderab	93	6,188	7,574	22.4	10	75,740	357	4.7

Table1: Demography and family status

Province	District	Number of villages in the district	Total number of families in 1978 in the district	Total number of families in 1996 in the district	% decrease / Increase in family number from 1978 to 1996	Average size of family	Estimate district population in 1996	Total number of widow families in the district	% widow families in the district
Kunduz	Imam Sahib	90	8,365	9,617	15	7	67,319	307	3.2
Kunduz	Char Dara	67	4,276	4,110	-3.9	7	28,770	32	0.8
Samangan	Smanagan	75	10,524	11,760	11.7	7	82,320	543	4.6
Samangan	Khulm	81	5,541	6,674	20.4	6	40,044	541	8.1
Balkh	Balkh center	73	7,193	10,232	42.2	7	71,624	590	5.8
Balkh	Nahr-e Shahi	60	3,350	4,909	46.5	6	29,454	581	11.8
Balkh	Dehdadi	57	4,979	6,327	27.1	9	56,943	601	9.5
Balkh	Sholgara	69	4,154	5,667	36.4	6	34,002	305	5.4
Jawzjan	Sang Charak	90	6,237	7,694	23.4	5	38,470	918	11.9
Jawzjan	Aqcha	64	5,380	5,395	0.3	7	37,765	814	15.1
Faryab	Pashtun Kot	81	6,473	8,270	27.8	7	57,890	1,356	16.4
Faryab	Almar	35	2,370	3,163	33.5	7	22,141	233	7.4
Faryab	Shirin Taqab	100	6,193	7,363	18.9	6	44,178	1,014	13.8
Badghis	Murghab	79	3,531	4,875	38.1	7	34,125	491	10.1
Badghis	Qadis	60	4,160	5,493	32	6	32,958	405	7.4
Herat	Enjil	142	22,951	34,106	48.6	8	272,848	3,530	10.4
Herat	Gozara	116	12,882	17,978	39.6	9	161,802	1,502	8.4
Herat	Pashtun Zarghun	106	7,608	10,557	38.8	7	73,899	743	7
Herat	Obeh	88	6,967	9,250	32.8	9	83,250	1,163	12.6
Farah	Anar Dara	49	2,519	3,607	43.2	6	21,642	333	9.2
Farah	Bala Buluk	51	2,145	2,878	34.2	6	17,268	317	11
Nimroz	Khash Rod	37	4,013	2,745	-31.6	8	21,960	175	6.4
Helmand	Nahr-e Saraj	142	10,937	10,641	-2.7	6	63,846	543	5.1
Helmand	Naw Zad	91	5,543	7,057	27.3	8	56,456	227	3.2
Qandahar	Dand	76	8,327	8,516	2.3	9	76,644	4,679	54.9
Qandahar	Arghandab	55	6,736	11,111	64.9	10	111,110	1,597	14.4
Qandahar	Panjwai	87	17,913	24,377	36.1	12	292,524	5,397	22.1
Qandahar	Shah Wali Kot	98	4,165	4,801	15.3	5	24,005	225	4.7
Zabul	Mizan	60	1,349	2,548	88.9	15	38,220	67	2.6
Zabul	Shah Jui	79	4,632	5,527	19.3	10	55,270	386	7
Zabul	Arghandab	92	2,295	4,623	101.4	11	50,853	120	2.6
Uruzgan	Khas Uruzgan	106	4,934	6,555	32.9	6	39,330	326	5
Uruzgan	Deh Rawod	61	5,107	7,579	48.4	8	60,632	734	9.7
Uruzgan	Choreh	97	4,058	5,431	33.8	8	43,448	734	13.5
Ghor	Saghar	66	3,987	5,240	31.4	6	31,440	177	3.4
Ghor	Taiwara	86	8,046	10,112	25.7	7	70,784	426	4.2
Bamyan	Kahmard	50	3,085	3,775	22.4	8	30,200	209	5.5
Bamyan	Saighan	47	2,735	3,382	23.7	8	27,056	183	5.4
Total		7,003	462,088	575,666	24.6	9	5,180,994	64,720	11.2

Table2: Main sources of information for extension support to farming communities (in % ranking)

Province	District	Govt Extension worker	NGO/Aid agencies extension worker	Village neighbours	Progressive farmers from the area	None
Kabul	Bagrami	23.0	25.0	12.8	34.5	4.7
Kabul	Shakar Dara	43.1	0.0	16.3	40.6	0.0
Kabul	Mir Bacha Kot	70.2	0.0	21.8	6.5	1.6
Kabul.	Qarabagh	0.0	0.0	98.1	1.9	0.0
Kapisa	Tagab	1.4	0.0	33.3	65.3	0.0
Kapisa	Nijrab	0.0	0.0	43.7	56.3	0.0
Parwan	Ghorband	49.5	0.9	18.5	31.1	0.0
Parwan	Bagram	42.4	0.0	30.4	27.2	0.0
Wardak	Nirkh	0.0	28.8	36.2	26.4	8.6
Wardak	Chak	0.0	12.8	50.1	32.5	4.5
Wardak	Sayedabad	0.0	25.5	7.0	35.0	32.5
Logar	Baraki	0.0	20.9	12.0	7.6	59.5
Logar	Khoshi	0.0	2.6	49.6	46.2	1.7
Logar	Charkh	0.0	22.7	69.7	4.5	3.0
Logar	Muhammad Agha	0.0	53.7	1.1	45.3	0.0
Ghazni	Jaghuri	0.5	0.5	1.1	97.8	0.0
Ghazni	Qarabagh	0.0	1.1	89.8	9.0	0.0
Paktika	Sharan	0.5	11.9	43.8	43.2	0.5
Paktika	Urgun	1.0	11.2	71.4	1.0	15.3
Paktia	Mandozai	26.5	41.6	18.6	13.3	0.0
Paktia	Nadir Shah Kot	0.9	1.7	48.7	48.7	0.0
Paktia	Zurmat	0.0	25.4	19.9	54.1	0.6
Nangarhar	Sorkh Rod	31.8	26.2	3.7	16.8	21.5
Nangarhar	Behsud	17.8	2.2	5.6	8.9	65.6
Nangarhar	Hesarak	0.0	0.0	0.0	0.0	100.0
Nangarhar	Khogiani	0.0	0.0	24.0	70.0	6.0
Nangarhar	Sherzad	0.0	2.6	1.3	3.9	92.1
Laghman	Mehtarlam	0.0	37.7	48.7	13.6	0.0
Laghman	Qaraghayi	0.0	1.4	0.0	4.2	94.4
Laghman	Alingar	1.2	1.2	0.0	0.0	97.6
Kunar	Khas Kunar	4.8	0.0	28.6	26.2	40.5
Kunar	Chawkai	0.0	11.8	3.9	84.2	0.0
Kunar	Nur Gul	0.0	0.0	77.5	5.0	17.5
Badakhshan	Jurm	0.0	0.0	45.4	46.4	8.2
Badakhshan	Baharak	0.0	0.0	96.2	1.9	1.9
Badakhshan	Keshem	0.0	0.0	50.2	49.5	0.4
Takhar	Rustaq	0.0	0.0	49.4	50.0	0.6
Takhar	Farkhar	8.0	0.0	63.0	28.0	1.0
Baghlan	Pul-e Khumri	0.0	0.0	0.0	100.0	0.0
Baghlan	Nahrin	0.9	0.9	28.4	45.9	23.9
Baghlan	Anderab	2.8	2.8	62.4	32.1	0.0
Kunduz	Imam Sahib	0.0	0.0	83.5	10.3	6.2
Kunduz	Char Dara	0.0	0.0	51.6	47.3	1.1
Samangan	Smanagan	2.1	0.0	75.3	22.7	0.0
Samangan	Khulm	0.0	0.0	48.9	50.0	1.1
Balkh	Balkh center	1.5	4.5	58.2	35.8	0.0
Balkh	Nahr-e Shahi	0.0	1.3	36.3	62.5	0.0
Balkh	Dehdadi	0.0	0.0	9.8	90.2	0.0
Balkh	Sholgara	0.0	0.0	41.3	58.7	0.0
Jawzjan	Sang Charak	1.2	0.0	50.9	46.7	1.2
Jawzjan	Aqcha	0.0	0.0	88.2	7.8	3.9
Faryab	Pashtun Kot	0.0	0.0	32.0	68.0	0.0
Faryab	Almar	0.0	0.0	55.0	43.3	1.7
Faryab	Shirin Taqab	0.0	0.0	14.2	85.8	0.0
Badghis	Murghab	89.6	0.0	7.8	2.6	0.0

Table2: Main sources of information for extension support to farming communities (in % ranking)

Province	District	Govt Extension worker	NGO/Aid agencies extension worker	Village neighbours	Progressive farmers from the area	None
Badghis	Qadis	0.0	0.0	50.6	49.4	0.0
Herat	Enjil	11.0	0.0	11.8	22.8	54.4
Herat	Gozara	13.0	0.0	16.5	56.5	13.9
Herat	Pashtun Zarghun	0.0	1.8	17.3	16.4	64.5
Herat	Obeh	3.1	0.8	39.7	56.5	0.0
Farah	Anar Dara	0.0	0.0	2.3	4.7	93.0
Farah	Bala Buluk	0.0	0.0	0.0	100.0	0.0
Nimroz	Khash Rod	0.0	0.0	0.0	97.1	2.9
Helmand	Nahr-e Saraj	0.0	0.0	99.2	0.8	0.0
Helmand	Naw Zad	7.5	9.0	40.3	28.4	14.9
Qandahar	Dand	0.0	0.0	1.7	3.4	94.9
Qandahar	Arghandab	0.0	3.5	45.6	31.6	19.3
Qandahar	Panjwai	0.0	0.0	2.4	0.0	97.6
Qandahar	Shah Wali Kot	0.0	0.0	54.4	21.9	23.8
Zabul	Mizan	0.0	0.0	9.8	1.6	88.5
Zabul	Shah Jui	0.0	0.0	2.5	0.0	97.5
Zabul	Arghandab	0.0	5.8	40.4	28.8	25.0
Uruzgan	Khas Uruzgan	0.0	10.2	60.2	20.4	9.2
Uruzgan	Deh Rawod	0.0	25.4	3.4	0.0	71.2
Uruzgan	Choreh	0.0	0.8	51.6	32.0	15.6
Ghor	Saghar	0.0	0.0	1.7	98.3	0.0
Ghor	Taiwara	0.0	0.0	3.6	94.0	2.4
Bamyan	Kahmard	0.0	14.3	81.6	4.1	0.0
Bamyan	Saighan	0.0	0.0	20.4	69.4	10.2
Average		5.8	5.7	34.1	35.2	19.2

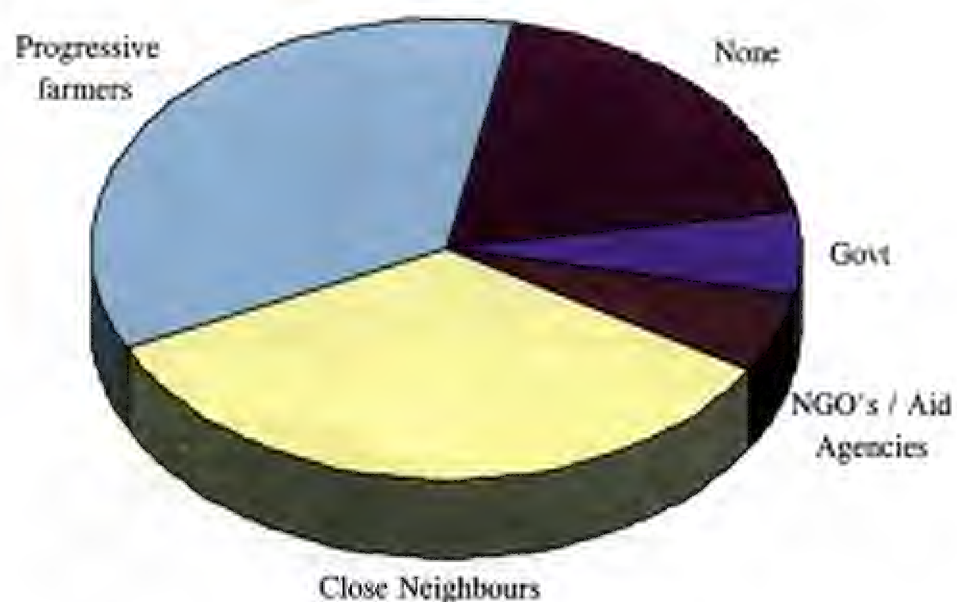


Table3: Village community level main decision makers (in average ranking)

Province	District	Maulvi	Commander	Malik	Elder	Khan	Trader	Teacher	Govt employee
Taliban controlled districts at the time of survey									
Kabul	Bagrami	4		5	1			2	3
Kabul	Shakar Dara	3	1	5	2	6		4	
Kabul	Mir Bacha Kot				1			3	2
Kapisa	Tagab	2	3	4	1			6	5
Wardak	Nirkh	2		4	1	3	6	4	
Wardak	Chak	3	6	4	2	1		5	
Wardak	Sayedabad	2			1			3	
Logar	Baraki	2			1			3	
Logar	Khoshi	2		3	1			4	
Logar	Charkh	4	2	2	1	7	5	5	
Logar	Muhammad Agha	3		2	1	4		5	
Ghazni	Qarabagh	2	5	4	1	6	7	8	3
Paktika	Sharan	2			1			3	
Paktika	Urgun	2	4	3	1		7	4	4
Paktia	Mandozai	2	4	3	1	6	8	7	5
Paktia	Nadir Shah Kot	2		3	1			4	
Paktia	Zurmat	2	4	3	1			5	
Nangarhar	Sorkh Rod	3	5	2	1	7	8	6	4
Nangarhar	Behsud	4	3	1	2	7	7	5	6
Nangarhar	Hesarak	2		3	1	4	7	5	6
Nangarhar	Khogiani	4		2	1	6	5	7	3
Nangarhar	Sherzad	3		2	1	4	6	5	7
Laghman	Mehtarlam	3		1	2	4		6	5
Laghman	Qaraghayi	2	4	3	1	7	8	5	6
Laghman	Alingar	2	3	4	1	7	8	5	6
Kunar	Khas Kunar	3		2	1			4	
Kunar	Chawkai	2		4	1		6	5	3
Kunar	Nur Gul	3	2	4	1			5	
Badghis	Qadis	3	2		1			4	
Herat	Enjil	1	8	3	2	6	7	5	4
Herat	Gozara	1		2	3			4	
Herat	Pashtun Zarghun	3	8	1	2	7	4	6	5
Herat	Obeh	2	3	4	1	5		6	
Farah	Anar Dara	2		3	1			3	3
Farah	Bala Buluk	1	6	4	2	5		3	
Nimroz	Khash Rod	2			1	4		3	
Helmand	Nahr-e Saraj	2	5	4	1	3	6	8	7
Helmand	Naw Zad	2	1		3			4	
Qandahar	Dand	3		2	1	4		5	
Qandahar	Arghandab	1			2	3	4	6	5
Qandahar	Panjwai	4	5	1	2	3		6	

*Because of same average ranks in some districts, different categories are ranked with same number (e.g. in Kabul, Qarabagh "Teacher" has a rank 4 and "Govt employee" also 4)

Table3: Village community level main decision makers (in average ranking)

Province	District	Maulvi	Commander	Malik	Elder	Khan	Trader	Teacher	Govt employee
Qandahar	Shah Wali Kot	2	5	3	1	4	6	7	
Zabul	Mizan	1		2	2	4		5	
Zabul	Shah Jui	2	8	5	1	6	7	4	3
Zabul	Arghandab	1	6	4	2	5	8	3	7
Uruzgan	Khas Uruzgan	2	5	4	1	6	3	7•	8
Uruzgan	Deh Rawod	1	6	4	2	3	8	7	5
Uruzgan	Choreh	1	3	4	2	5	6	8	7
Ghor	Saghar	2	4	3	1			5	
Ghor	Taiwara	1	5	4	2	6		3	7
Average		**2**	**4**	**3**	**1**	**6**	**8**	**5**	**7**
Taliban oposition controlled districts at the time of survey									
Bamyan	Kahmard	2	1	5	3	8	4	6	7
Bamyan	Saighan	2	1	4	3			5	
Kabul	Qarabagh	2		3	1			4	4
Kapisa	Nijrab	2	5	4	1			3	
Parwan	Ghorband		1		2			3	
Parwan	Bagram	1		2	3		4	4	4
Ghazni	Jaghuri	3	2	6	1			4	5
Badakhshan	Jurm	5	1	7	2	8	6	4	3
Badakhshan	Baharak	4	1	2	3	7	8	6	5
Badakhshan	Keshem	4	2	3	6	1	5	7	8
Takhar	Rustaq	5	1	3	4	6	7	8	2
Takhar	Farkhar	4	3	1	2			5	6
Baghlan	Pul-e Khumri	3	1	4	2	6	6	8	5
Baghlan	Nahrin	2	1		3			5	4
Baghlan	Anderab	1	2	3	5	4	6	7	8
Kunduz	Imam Sahib	4	1	3	5	2		6	
Kunduz	Char Dara	5	1	4	3	2		6	
Samangan	Smanagan	3	1		2	3		5	
Samangan	Khulm	1	4		3			1	
Balkh	Balkh center	4	1	3	2	5	7	8	6
Balkh	Nahr-e Shahi	3	2	1	4			5	
Balkh	Dehdadi	4	1	2	3			5	
Balkh	Sholgara	3	1		2			4	
Jawzjan	Sang Charak	2	1		3		4	6	5
Jawzjan	Aqcha	2	1		3	4	5	7	6
Faryab	Pashtun Kot	3	1	4	2	5	6	8	7
Faryab	Almar		1		2			3	
Faryab	Shirin Taqab	4	2	1	3	6	5	7	
Badghis	Murghab	3	1		2			4	
Average		**3**	**1**	**4**	**2**	**5**	**8**	**6**	**6**

*Because of same average ranks in some districts, different categories are ranked with same number (e.g. in Kabul, Qarabagh "Teacher" has a rank 4 and "Govt employee" also 4)

Table4: Health and Educational structures

Province	District	% of Villages having access to educational facilities	% of Villages having access to health facilities
Kabul	Bagrami	100.0	40.4
Kabul	Shakar Dara	66.3	14.5
Kabul	Mir Bacha Kot	100.0	29.7
Kabul	Qarabagh	42.6	3.7
Kapisa	Tagab	95.8	24.0
Kapisa	Nijrab	100.0	1.6
Parwan	Ghorband	100.0	0.9
Parwan	Bagram	100.0	4.4
Wardak	Nirkh	99.1	4.6
Wardak	Chak	84.1	11.4
Wardak	Sayedabad	18.4	5.7
Logar	Baraki	40.6	21.7
Logar	Khoshi	36.5	1.6
Logar	Charkh	64.6	64.6
Logar	Muhammad Agha	89.1	18.2
Ghazni	Jaghuri	92.9	1.6
Ghazni	Qarabagh	23.1	2.9
Paktika	Sharan	72.9	74.0
Paktika	Urgun	40.9	4.5
Paktia	Mandozai	96.7	8.2
Paktia	Nadir Shah Kot	55.0	6.7
Paktia	Zurmat	94.0	1.7
Nangarhar	Sorkh Rod	91.0	10.1
Nangarhar	Behsud	89.0	3.3
Nangarhar	Hesarak	20.8	1.9
Nangarhar	Khogiani	90.9	3.4
Nangarhar	Sherzad	97.4	3.9
Laghman	Mehtarlam	94.9	4.3
Laghman	Qaraghayi	94.5	28.8
Laghman	Alingar	78.9	38.6
Kunar	Khas Kunar	69.2	2.6
Kunar	Chawkai	62.3	2.9
Kunar	Nur Gul	19.5	2.4
Badakhshan	Jurm	83.3	8.8
Badakhshan	Baharak	89.4	3.8
Badakhshan	Keshem	91.1	0.7
Takhar	Rustaq	97.5	0.0
Takhar	Farkhar	95.5	4.5
Baghlan	Pul-e Khumri	44.4	1.2
Baghlan	Nahrin	100.0	4.4
Baghlan	Anderab	100.0	4.3
Kunduz	Imam Sahib	98.9	5.6
Kunduz	Char Dara	98.5	1.5
Samangan	Smanagan	100.0	0.0
Samangan	Khulm	82.7	1.2
Balkh	Balkh center	100.0	9.6
Balkh	Nahr-e Shahi	50.0	15.0
Balkh	Dehdadi	87.7	5.3
Balkh	Sholgara	56.5	8.7
Jawzjan	Sang Charak	32.2	25.6
Jawzjan	Aqcha	17.2	17.2
Faryab	Pashtun Kot	67.9	0.0
Faryab	Almar	17.1	0.0
Faryab	Shirin Taqab	44.0	0.0
Badghis	Murghab	7.6	5.1
Badghis	Qadis	53.3	8.3

habits, Afghan farmers are generally quite receptive to innovations when opportunities to increase their farm income are obvious and this is clearly demonstrated through their spontaneous interest in developing the production of horticultural cash crops.

Recommendations

To take full advantage of these opportunities, a number of issues need to be addressed:

- In many districts of the country and particularly in the southern, eastern and central-eastern regions, the horticultural sector is not anymore in a rehabilitation phase but already in a development phase. In this case future programmes of assistance should be conditional to an increased contribution and participation from the side of farming communities.

- Deficit in irrigation water remains a very serious limiting factor to crop production. The rehabilitation of irrigation structures and the training of farmers on improved water resources management practices should be treated with top priority as part of integrated programmes for crop production development.

- Horticultural crop production practices are still at very low technical standards. This issue needs to be addressed through long term programmes aiming at the development of community-based extension schemes promoting "Integrated Production and Protection" (IPP) practices.

- Horticultural crops diversification is still at a very low level. This issue was eventually addressed in the past through the introduction and promotion of various species and varieties of horticultural crops. However, the impact of this activity always remained limited mostly because of the total absence of structures as required for the grading, packaging, storage, processing and marketing of a wider range of perishable horticultural products. In the absence of governmental institutions to support such activities this issue also needs to be addressed through the development of community-based organizations (e.g. cooperatives, growers associations, etc.).

- Most farmers are facing difficulties in having access to quality agricultural inputs and farm equipment at affordable prices. Considering the commercial nature of this activity, responsibility for its implementation should most preferably remain with the private sector (traders, cooperatives or growers associations). However, assistance will be required to monitor this sector of activities and to provide information to private entrepreneurs and community organizations on technical specifications and sources of agricultural inputs as required by farmers.

Table4: Health and Educational structures

Province	District	% of Villages having access to educational facilities	% of Villages having access to health facilities
Herat	Enjil	86.6	4.2
Herat	Gozara	94.0	4.3
Herat	Pashtun Zarghun	71.7	34.0
Herat	Obeh	40.9	0.0
Farah	Anar Dara	63.3	49.0
Farah	Bala Buluk	3.9	0.0
Nimroz	Khash Rod	16.2	0.0
Helmand	Nahr-e Saraj	1.4	2.8
Helmand	Naw Zad	40.7	1.1
Qandahar	Dand	3.9	1.3
Qandahar	Arghandab	40.0	3.6
Qandahar	Panjwai	72.4	6.9
Qandahar	Shah Wali Kot	17.3	9.2
Zabul	Mizan	36.7	0.0
Zabul	Shah Jui	0.0	0.0
Zabul	Arghandab	14.1	0.0
Uruzgan	Khas Uruzgan	12.3	1.9
Uruzgan	Deh Rawod	23.0	14.8
Uruzgan	Choreh	58.8	1.0
Ghor	Saghar	0.0	0.0
Ghor	Taiwara	0.0	0.0
Bamyan	Kahmard	42.0	0.0
Bamyan	Saighan	19.1	2.1
Average		60.7	9.1

Table5: Land holding status

Province	District	Private land holding					Govt. land holding					
								Govt land use in %				
		Total arable land (jeribs)	Total number of families in 1996	Average arable land area per family (jeribs)	Total number of landless families	% landless families	Total land owned by Govt (jeribs)	Private farmers	Share cropper	Commander	Govt	Others
Kabul	Bagrami	70393	9319	8	4081	43.8	603	0.0	0.0	0.0	0.0	0.0
Kabul	Shakar Dara	44150	7722	6	2907	37.6	9730	0.0	51.4	0.0	0.0	0.0
Kabul	Mir Bacha Kot	19779	7125	3	2319	32.5	0	0.0	0.0	0.0	0.0	0.0
Kabul	Qarabagh	18754	4034	5	927	23.0	0	0.0	0.0	0.0	0.0	0.0
Kapisa	Tagab	15410	5207	3	803	15.4	2	0.0	0.0	0.0	0.0	0.0
Kapisa	Nijrab	33018	9658	3	355	3.7	0	0.0	0.0	0.0	0.0	0.0
Parwan	Ghorband	27830	8490	3	2365	27.9	750	0.0	0.0	0.0	0.0	0.0
Parwan	Bagram	23510	4961	5	712	14.4	900	0.0	0.0	0.0	0.0	0.0
Wardak	Nirkh	26935	3763	7	224	6.0	0	0.0	0.0	0.0	0.0	0.0
Wardak	Chak	23762	8167	3	954	11.7	2	0.0	0.0	0.0	0.0	0.0
Wardak	Sayedabad	94208	11953	8	1141	9.5	0	0.0	0.0	0.0	0.0	0.0
Logar	Baraki	71353	7688	9	1794	23.3	90	46.7	8.9	0.0	44.4	0.0
Logar	Khoshi	13929	1487	9	1386	93.2	0	0.0	0.0	0.0	0.0	0.0
Logar	Charkh	13957	3323	4	909	27.4	0	0.0	0.0	0.0	0.0	0.0
Logar	Muhammad Agha	49172	7585	6	4101	54.1	550	0.0	0.0	0.0	0.0	0.0
Ghazni	Jaghuri	147220	19606	8	1705	8.7	5	0.0	0.0	0.0	0.0	0.0
Ghazni	Qarabagh	620233	10843	57	2486	22.9	1	0.0	0.0	0.0	0.0	0.0
Paktika	Sharan	60366	3091	20	504	16.3	12	0.0	0.0	0.0	0.0	0.0
Paktika	Urgun	24233	3564	7	334	9.4	0	0.0	0.0	0.0	0.0	0.0
Paktia	Mandozai	19875	3542	6	182	5.1	0	0.0	0.0	0.0	0.0	0.0
Paktia	Nadir Shah Kot	15330	3905	4	388	9.9	100	0.0	0.0	0.0	100.0	0.0
Paktia	Zurmat	149822	4786	31	298	6.2	0	0.0	0.0	0.0	0.0	0.0
Nangarhar	Sorkh Rod	31762	5190	6	2059	39.7	42	0.0	0.0	23.8	16.7	0.0
Nangarhar	Behsud	29491	5488	5	2303	42.0	114	0.0	87.7	12.3	0.0	0.0
Nangarhar	Hesarak	16500	4071	4	778	19.1	0	0.0	0.0	0.0	0.0	0.0
Nangarhar	Khogiani	61797	8783	7	1215	13.8	339	11.5	0.0	0.0	88.5	0.0
Nangarhar	Sherzad	10387	3759	3	349	9.3	302	0.0	0.0	0.0	0.0	0.0
Laghman	Mehtarlam	20925	7758	3	3175	40.9	1	0.0	0.0	0.0	0.0	0.0
Laghman	Qaraghayi	23203	6861	3	5430	79.1	0	0.0	0.0	0.0	0.0	0.0
Laghman	Alingar	36199	14668	2	2084	14.2	36	0.0	0.0	50.0	50.0	0.0
Kunar	Khas Kunar	9132	2431	4	601	24.7	1	0.0	0.0	0.0	0.0	0.0
Kunar	Chawkai	6654	3096	2	797	25.7	20	0.0	0.0	0.0	0.0	0.0
Kunar	Nur Gul	6210	4181	1	979	23.4	40	0.0	0.0	0.0	0.0	0.0
Badakhshan	Jurm	61487	7291	8	1733	23.8	62	0.0	0.0	0.0	0.0	0.0
Badakhshan	Baharak	51964	4359	12	226	5.2	1170	0.0	0.0	100.0	0.0	0.0
Badakhshan	Keshem	455308	9800	46	1487	15.2	196	33.7	35.7	0.0	0.0	0.0
Takhar	Rustaq	325348	10460	31	3326	31.8	5700	0.0	0.0	100.0	0.0	0.0
Takhar	Farkhar	23135	6140	4	1592	25.9	90	0.0	66.7	0.0	0.0	0.0
Baghlan	Pul-e Khumri	144560	5177	28	760	14.7	1825	0.0	100.0	0.0	0.0	0.0
Baghlan	Nahrin	94839	4815	20	786	16.3	50	0.0	0.0	0.0	0.0	0.0

Table5: Land holding status

Province	District	Private land holding					Govt. land holding					
							Total land owned by Govt (jeribs)	Govt land use in %				
		Total arable land (jeribs)	Total number of families in 1996	Average arable land area per family (jeribs)	Total number of landless families	% landless families		Private farmers	Share cropper	Commander	Govt	Others
Baghlan	Anderab	100727	7574	13	429	5.7	200	100.0	0.0	0.0	0.0	0.0
Kunduz	Imam Sahib	139208	9617	14	3361	34.9	0	0.0	0.0	0.0	0.0	0.0
Kunduz	Char Dara	76000	4110	18	1119	27.2	188	0.0	0.0	95.7	0.0	0.0
Samangan	Smanagan	313507	11760	27	1295	11.0	0	0.0	0.0	0.0	0.0	0.0
Samangan	Khulm	92641	6674	14	1702	25.5	26	42.3	23.1	5.8	0.0	1.9
Balkh	Balkh center	161005	10232	16	1170	11.4	4646	0.0	0.0	91.3	0.0	0.0
Balkh	Nahr-e Shahi	178931	4909	36	2480	50.5	6355	94.3	0.0	5.7	0.0	0.0
Balkh	Dehdadi	38370	6327	6	2831	44.7	1530	0.0	0.0	0.0	85.0	0.0
Balkh	Sholgara	218980	5667	39	1134	20.0	1800	0.0	0.0	100.0	0.0	0.0
Jawzjan	Sang Charak	582340	7694	76	965	12.5	20	0.0	0.0	0.0	0.0	0.0
Jawzjan	Aqcha	358480	5395	66	693	12.8	6300	0.0	12.7	0.0	0.0	0.0
Faryab	Pashtun Kot	613884	8270	74	476	5.8	2059	0.0	0.0	100.0	0.0	0.0
Faryab	Almar	63570	3163	20	765	24.2	5	0.0	0.0	100.0	0.0	0.0
Faryab	Shirin Taqab	110446	7363	15	1982	26.9	100	0.0	0.0	100.0	0.0	0.0
Badghis	Murghab	68373	4875	14	473	9.7	4	0.0	0.0	0.0	0.0	0.0
Badghis	Qadis	364650	5493	66	578	10.5	4	0.0	0.0	0.0	0.0	0.0
Herat	Enjil	68099	34106	2	16747	49.1	2631	0.0	70.8	0.0	2.7	0.0
Herat	Gozara	61236	17978	3	5573	31.0	815	16.0	28.2	0.0	3.7	0.0
Herat	Pashtun Zarghun	159705	10557	15	7621	72.2	10	0.0	100.0	0.0	0.0	0.0
Herat	Obeh	153135	9250	17	3690	39.9	82	0.0	73.2	0.0	0.0	0.0
Farah	Anar Dara	57102	3607	16	1584	43.9	150	33.3	0.0	0.0	0.0	0.0
Farah	Bala Buluk	25860	2878	9	447	15.5	0	0.0	0.0	0.0	0.0	0.0
Nimroz	Khash Rod	114625	2745	42	1049	38.2	20	0.0	0.0	0.0	100.0	0.0
Helmand	Nahr-e Saraj	159811	10641	15	3271	30.7	136	0.0	0.0	0.0	0.0	0.0
Helmand	Naw Zad	52377	7057	7	1488	21.1	320	0.0	0.0	0.0	0.0	0.0
Qandahar	Dand	151719	8516	18	6002	70.5	0	0.0	0.0	0.0	0.0	0.0
Qandahar	Arghandab	98590	11111	9	4135	37.2	347	0.0	0.0	0.0	50.4	1.7
Qandahar	Panjwai	160390	24377	7	8688	35.6	1100	100.0	0.0	0.0	0.0	0.0
Qandahar	Shah Wali Kot	74080	4801	15	2027	42.2	4016	99.6	0.0	0.0	0.0	0.0
Zabul	Mizan	53807	2548	21	671	26.3	8	0.0	0.0	0.0	0.0	0.0
Zabul	Shah Jui	95445	5527	17	858	15.5	0	0.0	0.0	0.0	0.0	0.0
Zabul	Arghandab	76070	4623	16	647	14.0	0	0.0	0.0	0.0	0.0	0.0
Uruzgan	Khas Uruzgan	51171	6555	8	516	7.9	203	0.0	3.0	0.0	92.1	0.0
Uruzgan	Deh Rawod	45057	7579	6	2093	27.6	8574	0.0	79.4	0.0	0.0	0.0
Uruzgan	Choreh	50675	5431	9	838	15.4	800	0.0	0.0	0.0	0.0	0.0
Ghor	Saghar	50570	5240	10	629	12.0	32	0.0	6.3	0.0	0.0	0.0
Ghor	Taiwara	87835	10112	9	1102	10.9	51	0.0	0.0	0.0	0.0	0.0
Bamyan	Kahmard	41195	3775	11	395	10.5	759	0.0	0.0	32.9	0.0	65.9
Bamyan	Saighan	36145	3382	11	381	11.3	0	0.0	0.0	0.0	0.0	0.0
Total		8397951	575666	15	152460	26.5	66024	7.3	9.5	11.6	8.0	0.9

Table6: Land irrigation status

Province	District	Total arable land (jeribs)	Total irrigated land (jeribs)	% irrigated of total arable land	Irrigation system (in % of irrigated area)			
					Canal	Karez	Spring	Well
Kabul	Bagrami	70393	38220	54.3	96.2	0.5	0.0	3.3
Kabul	Shakar Dara	44150	38714	87.7	51.4	38.1	10.5	0.0
Kabul	Mir Bacha Kot	19779	19775	100.0	71.6	28.4	0.0	0.0
Kabul	Qarabagh	18754	13000	69.3	94.1	5.9	0.0	0.0
Kapisa	Tagab	15410	13887	90.1	50.0	37.1	12.9	0.0
Kapisa	Nijrab	33018	15456	46.8	84.9	4.5	10.6	0.0
Parwan	Ghorband	27830	27545	99.0	100.0	0.0	0.0	0.0
Parwan	Bagram	23510	22510	95.7	96.1	3.9	0.0	0.0
Wardak	Nirkh	26935	25585	95.0	70.3	23.9	5.5	0.3
Wardak	Chak	23762	21577	90.8	37.5	29.1	33.4	0.0
Wardak	Sayedabad	94208	66273	70.3	36.9	59.9	2.5	0.8
Logar	Baraki	71353	30124	42.2	58.7	35.3	6.0	0.0
Logar	Khoshi	13929	4969	35.7	81.5	18.2	0.3	0.0
Logar	Charkh	13957	9862	70.7	78.2	19.0	2.8	0.0
Logar	Muhammad Agha	49172	36592	74.4	61.9	29.3	8.7	0.0
Ghazni	Jaghuri	147220	113750	77.3	14.6	55.0	29.8	0.5
Ghazni	Qarabagh	620233	386168	62.3	1.2	87.5	11.2	0.2
Paktika	Sharan	60366	53351	88.4	24.7	56.4	0.9	18.1
Paktika	Urgun	24233	24233	100.0	2.8	56.3	40.9	0.0
Paktia	Mandozai	19875	5620	28.3	96.3	3.7	0.0	0.0
Paktia	Nadir Shah Kot	15330	13305	86.8	88.3	9.4	2.4	0.0
Paktia	Zurmat	149822	81769	54.6	12.6	62.5	24.1	0.8
Nangarhar	Sorkh Rod	31762	27552	86.7	81.9	0.0	18.1	0.0
Nangarhar	Behsud	29491	26971	91.5	92.0	3.2	4.8	0.0
Nangarhar	Hesarak	16500	15230	92.3	79.6	13.4	7.0	0.0
Nangarhar	Khogiani	61797	32077	51.9	74.7	9.6	15.6	0.0
Nangarhar	Sherzad	10387	9307	89.6	69.6	4.6	25.8	0.0
Laghman	Mehtarlam	20925	20145	96.3	97.5	0.0	2.5	0.0
Laghman	Qaraghayi	23203	23003	99.1	98.9	0.6	0.5	0.0
Laghman	Alingar	36199	35956	99.3	99.0	0.1	0.9	0.0
Kunar	Khas Kunar	9132	7350	80.5	95.2	2.0	2.8	0.0
Kunar	Chawkai	6654	4104	61.7	65.0	0.0	35.0	0.0
Kunar	Nur Gul	6210	4667	75.2	98.0	0.0	2.0	0.0
Badakhshan	Jurm	61487	19901	32.4	100.0	0.0	0.0	0.0
Badakhshan	Baharak	51964	39934	76.8	81.4	0.3	18.3	0.0
Badakhshan	Keshem	455308	35778	7.9	98.9	0.1	1.0	0.0
Takhar	Rustaq	325348	17078	5.2	58.3	0.0	41.7	0.0
Takhar	Farkhar	23135	5275	22.8	87.7	0.0	12.3	0.0
Baghlan	Pul-e Khumri	144560	97960	67.8	98.8	0.0	1.2	0.0
Baghlan	Nahrin	94839	20819	22.0	73.4	0.0	26.6	0.0
Baghlan	Anderab	100727	56142	55.7	87.0	0.0	13.0	0.0
Kunduz	Imam Sahib	139208	131900	94.8	100.0	0.0	0.0	0.0

Table6: Land irrigation status

Province	District	Total arable land (jeribs)	Total irrigated land (jeribs)	% irrigated of total arable land	Irrigation system (in % of irrigated area)			
					Canal	Karez	Spring	Well
Kunduz	Char Dara	76000	76000	100.0	100.0	0.0	0.0	0.0
Samangan	Smanagan	313507	28752	9.2	100.0	0.0	0.0	0.0
Samangan	Khulm	92641	72326	78.1	91.0	0.0	7.9	1.2
Balkh	Balkh center	161005	160755	99.8	100.0	0.0	0.0	0.0
Balkh	Nahr-e Shahi	178931	118240	66.1	93.4	0.0	6.6	0.0
Balkh	Dehdadi	38370	38370	100.0	100.0	0.0	0.0	0.0
Balkh	Sholgara	218980	23070	10.5	86.1	0.0	13.9	0.0
Jawzjan	Sang Charak	582340	32386	5.6	95.7	1.0	3.3	0.0
Jawzjan	Aqcha	358480	358400	100.0	100.0	0.0	0.0	0.0
Faryab	Pashtun Kot	613884	13164	2.1	97.8	0.0	2.2	0.0
Faryab	Almar	63570	15220	23.9	100.0	0.0	0.0	0.0
Faryab	Shirin Taqab	110446	19377	17.5	97.3	1.7	1.0	0.0
Badghis	Murghab	68373	22998	33.6	97.3	0.9	1.8	0.0
Badghis	Qadis	364650	11850	3.2	1.9	26.5	70.7	0.8
Herat	Enjil	68099	65388	96.0	95.5	3.6	0.6	0.2
Herat	Gozara	61236	60776	99.2	85.5	7.7	5.7	1.1
Herat	Pashtun Zarghun	159705	112355	70.4	86.5	8.7	4.8	0.0
Herat	Obeh	153135	58235	38.0	66.3	5.6	28.2	0.0
Farah	Anar Dara	57102	54117	94.8	18.4	63.0	18.5	0.1
Farah	Bala Buluk	25860	25660	99.2	90.6	6.3	3.1	0.0
Nimroz	Khash Rod	114625	112825	98.4	83.8	2.1	11.8	2.3
Helmand	Nahr-e Saraj	159811	155535	97.3	94.8	0.9	0.3	4.0
Helmand	Naw Zad	52377	49837	95.2	12.5	77.0	10.6	0.0
Qandahar	Dand	151719	145776	96.1	83.0	16.0	0.0	1.1
Qandahar	Arghandab	98590	70840	71.9	100.0	0.0	0.0	0.0
Qandahar	Panjwai	160390	153190	95.5	94.4	2.2	0.0	3.4
Qandahar	Shah Wali Kot	74080	56640	76.5	17.8	55.0	26.5	0.7
Zabul	Mizan	53807	36877	68.5	3.7	20.7	75.7	0.0
Zabul	Shah Jui	95445	95295	99.8	40.6	49.8	9.4	0.2
Zabul	Arghandab	76070	67436	88.6	50.0	28.0	22.0	0.0
Uruzgan	Khas Uruzgan	51171	48213	94.2	48.2	24.8	26.9	0.1
Uruzgan	Deh Rawod	45057	39997	88.8	89.1	4.3	0.1	6.5
Uruzgan	Choreh	50675	27878	55.0	50.4	21.7	27.9	0.0
Ghor	Saghar	50570	19990	39.5	39.9	0.7	59.4	0.0
Ghor	Taiwara	87835	49635	56.5	12.1	29.1	58.5	0.4
Bamyan	Kahmard	41195	19005	46.1	97.0	0.3	2.8	0.0
Bamyan	Saighan	36145	15545	43.0	95.7	1.4	3.0	0.0
Total & %		8397951	4225387	50.3	72.9	14.6	11.8	0.6

Table7: Water availability / Irrigation structures rehabilitation requirements

Province	District	% of villages where water is not suficient	Means of improvement as suggested by village communities (% of responses)					
			Intake rehabilitation	Canal infrastructure repair	Flood control through water harvesting	Retaining wall or dam resrvoir	Canal or karez cleaning	Other
Kabul	Bagrami	100.0	9.9	5.3	2.3	0.0	82.4	0.0
Kabul	Shakar Dara	74.7	44.7	0.0	0.9	6.1	48.2	0.0
Kabul	Mir Bacha Kot	97.8	0.0	0.0	0.0	0.0	100.0	0.0
Kabul	Qarabagh	98.1	92.5	0.0	7.5	0.0	0.0	0.0
Kapisa	Tagab	88.5	47.7	1.8	0.0	0.0	17.1	33.3
Kapisa	Nijrab	88.6	21.8	20.8	17.3	3.0	28.7	8.4
Parwan	Ghorband	100.0	2.2	0.0	0.0	0.0	97.8	0.0
Parwan	Bagram	5.9	0.0	0.0	0.0	0.0	100.0	0.0
Wardak	Nirkh	89.0	2.9	26.4	27.0	2.3	38.5	2.9
Wardak	Chak	83.6	34.1	18.6	13.8	8.0	24.4	1.0
Wardak	Sayedabad	82.3	21.2	13.5	0.0	0.6	64.7	0.0
Logar	Baraki	90.9	24.2	9.8	12.9	2.3	47.0	3.8
Logar	Khoshi	69.8	24.2	4.0	7.1	33.3	20.2	11.1
Logar	Charkh	56.9	15.8	12.3	7.0	0.0	49.1	15.8
Logar	Muhammad Agha	85.5	38.1	46.4	10.7	1.2	1.2	2.4
Ghazni	Jaghuri	98.9	1.4	0.6	22.9	19.8	48.7	6.5
Ghazni	Qarabagh	98.8	1.6	4.1	6.7	5.2	81.3	1.0
Paktika	Sharan	89.6	16.7	0.0	4.9	0.0	35.8	42.6
Paktika	Urgun	85.2	3.8	2.6	0.0	0.0	93.6	0.0
Paktia	Mandozai	88.5	22.6	16.7	15.5	4.8	2.4	38.1
Paktia	Nadir Shah Kot	55.0	25.5	15.7	7.8	2.0	35.3	13.7
Paktia	Zurmat	93.2	0.7	1.4	4.3	15.6	78.0	0.0
Nangarhar	Sorkh Rod	79.8	49.3	8.2	19.2	0.0	21.9	1.4
Nangarhar	Behsud	75.8	49.2	30.5	18.8	0.8	0.8	0.0
Nangarhar	Hesarak	66.0	40.5	0.0	16.2	2.7	40.5	0.0
Nangarhar	Khogiani	79.5	42.9	26.3	15.8	0.8	13.5	0.8
Nangarhar	Sherzad	66.2	49.0	13.3	35.7	0.0	1.0	1.0
Laghman	Mehtarlam	79.5	42.2	33.9	18.9	2.2	1.7	1.1
Laghman	Qaraghayi	39.7	75.0	3.6	21.4	0.0	0.0	0.0
Laghman	Alingar	83.6	40.8	4.1	45.6	0.7	0.0	8.8
Kunar	Khas Kunar	89.7	46.7	41.7	1.7	0.0	10.0	0.0
Kunar	Chawkai	49.3	57.1	10.2	0.0	2.0	28.6	2.0
Kunar	Nur Gul	65.9	55.3	18.4	15.8	0.0	7.9	2.6
Badakhshan	Jurm	3.9	42.9	0.0	57.1	0.0	0.0	0.0
Badakhshan	Baharak	13.5	46.7	6.7	26.7	20.0	0.0	0.0
Badakhshan	Keshem	18.5	72.7	0.0	0.0	0.0	0.0	27.3
Takhar	Rustaq	94.1	16.5	34.0	2.1	2.1	44.3	1.0
Takhar	Farkhar	48.9	57.6	15.2	0.0	0.0	0.0	27.3
Baghlan	Pul-e Khumri	45.7	51.2	4.7	0.0	0.0	37.2	7.0
Baghlan	Nahrin	63.7	10.9	4.7	78.1	3.1	1.6	1.6

Table7: Water availability / Irrigation structures rehabilitation requirements

Province	District	% of villages where water is not suficient	Means of improvement as suggested by village communities (% of responses)					
			Intake rehabilitation	Canal infrastructure repair	Flood control through water harvesting	Retaining wall or dam resrvoir	Canal or karez cleaning	Other
Baghlan	Anderab	49.5	41.4	28.7	3.4	0.0	23.0	3.4
Kunduz	Imam Sahib	45.6	58.2	4.5	0.0	0.0	3.0	34.3
Kunduz	Char Dara	73.1	14.4	35.1	0.0	0.0	48.5	2.1
Samangan	Smanagan	82.7	0.0	0.0	0.0	0.0	50.0	50.0
Samangan	Khulm	97.5	0.0	23.8	10.7	0.8	18.9	45.9
Balkh	Balkh center	19.2	0.0	75.0	0.0	0.0	25.0	0.0
Balkh	Nahr-e Shahi	66.7	67.9	8.9	0.0	0.0	23.2	0.0
Balkh	Dehdadi	89.5	50.5	0.0	0.0	0.0	49.5	0.0
Balkh	Sholgara	56.5	33.9	22.0	0.0	8.5	16.9	18.6
Jawzjan	Sang Charak	73.3	63.4	5.9	2.0	0.0	1.0	27.7
Jawzjan	Aqcha	100.0	2.5	2.5	0.0	0.0	42.5	52.5
Faryab	Pashtun Kot	53.1	0.0	0.0	0.0	0.0	50.0	50.0
Faryab	Almar	94.3	0.0	50.0	3.2	0.0	46.8	0.0
Faryab	Shirin Taqab	99.0	0.0	0.0	12.8	0.7	51.1	35.5
Badghis	Murghab	13.9	0.0	0.0	0.0	0.0	50.0	50.0
Badghis	Qadis	100.0	0.0	1.1	0.0	0.0	50.5	48.4
Herat	Enjil	91.5	32.0	1.0	0.0	0.0	23.7	43.3
Herat	Gozara	78.4	66.9	1.7	0.0	0.0	11.9	19.5
Herat	Pashtun Zarghun	80.2	44.0	2.1	0.7	1.4	42.6	9.2
Herat	Obeh	86.4	30.4	23.6	24.3	2.0	19.6	0.0
Farah	Anar Dara	89.8	30.0	10.0	5.7	5.7	45.7	2.9
Farah	Bala Buluk	100.0	25.0	21.0	28.0	24.0	2.0	0.0
Nimroz	Khash Rod	100.0	31.9	1.4	0.0	0.0	53.6	13.0
Helmand	Nahr-e Saraj	44.4	30.1	38.8	1.0	0.0	30.1	0.0
Helmand	Naw Zad	94.5	0.0	6.7	2.2	0.0	88.8	2.2
Qandahar	Dand	98.7	26.8	42.0	0.7	0.0	27.5	2.9
Qandahar	Arghandab	16.4	14.3	42.9	14.3	0.0	14.3	14.3
Qandahar	Panjwai	94.3	43.9	45.7	0.0	0.0	7.9	2.4
Qandahar	Shah Wali Kot	93.9	38.7	8.6	12.3	6.1	33.7	0.6
Zabul	Mizan	98.3	6.0	4.0	25.0	3.0	26.0	36.0
Zabul	Shah Jui	98.7	28.0	0.0	4.9	0.0	67.1	0.0
Zabul	Arghandab	58.7	25.0	25.0	0.0	0.0	50.0	0.0
Uruzgan	Khas Uruzgan	66.0	17.5	35.1	16.7	0.9	28.1	1.8
Uruzgan	Deh Rawod	83.6	40.8	16.9	2.8	4.2	15.5	19.7
Uruzgan	Choreh	69.1	31.3	27.3	3.0	3.0	31.3	4.0
Ghor	Saghar	100.0	10.3	12.7	27.0	19.0	30.2	0.8
Ghor	Taiwara	100.0	16.4	4.1	10.3	2.7	41.1	25.3
Bamyan	Kahmard	14.0	50.0	42.9	0.0	0.0	7.1	0.0
Bamyan	Saighan	78.7	17.5	5.0	10.0	0.0	2.5	65.0
Average		73.8	29	14.3	9.7	2.8	32.3	11.9

Table8: Farm power mechanization status in relation to area under crop cultivation

Province	District	Total area under cultivation (ha)	Total number of pair of oxen	Total number of tractors	Total number of threshers	Average number of pair of oxen / **1000 ha**	Average number of tractor / **1000** ha	Average number of thresher / **1000 ha**
Kabul	Bagrami	14,079	223	27	10	15.8	1.9	0.7
Kabul	Shakar Dara	8,830	822	27	13	93.1	3.1	1.5
Kabul	Mir Bacha Kot	3,956	170	3	1	43.0	0.8	0.3
Kabul	Qarabagh	3,751	198	4	2	52.8	1.1	0.5
Kapisa	Tagab	3,082	680	0	0	220.6	0.0	0.0
Kapisa	Nijrab	6,604	1,485	6	5	224.9	0.9	0.8
Parwan	Ghorband	5,566	788	7	2	141.6	1.3	0.4
Parwan	Bagram	4,702	584	6	6	124.2	1.3	1.3
Wardak	Nirkh	5,387	882	2	0	163.7	0.4	0.0
Wardak	Chak	4,752	761	7	5	160.1	1.5	1.1
Wardak	Sayedabad	18,842	622	78	2	33.0	4.1	0.1
Logar	Baraki	14,271	899	38	3	63.0	2.7	0.2
Logar	Khoshi	2,786	61	6	1	21.9	2.2	0.4
Logar	Charkh	2,791	158	21	6	56.6	7.5	2.1
Logar	Muhammad Agha	9,834	299	20	14	30.4	2.0	1.4
Ghazni	Jaghuri	29,444	1,493	14	1	50.7	0.5	0.0
Ghazni	Qarabagh	124,047	971	220	2	7.8	1.8	0.0
Paktika	Sharan	12,073	0	363	26	0.0	30.1	2.2
Paktika	Urgun	4,847	173	106	20	35.7	21.9	4.1
Paktia	Mandozai	3,975	49	108	50	12.3	27.2	12.6
Paktia	Nadir Shah Kot	3,066	463	36	14	151.0	11.7	4.6
Paktia	Zurmat	29,964	2	575	10	0.1	19.2	0.3
Nangarhar	Sorkh Rod	6,352	823	43	36	129.6	6.8	5.7
Nangarhar	Behsud	5,898	590	47	40	100.0	8.0	6.8
Nangarhar	Hesarak	3,300	833	8	8	252.4	2.4	2.4
Nangarhar	Khogiani	12,359	1,325	18	15	107.2	1.5	1.2
Nangarhar	Sherzad	2,077	943	13	1	454.0	6.3	0.5
Laghman	Mehtarlam	4,185	1,725	8	4	412.2	1.9	1.0
Laghman	Qaraghayi	4,641	1,289	9	2	277.7	1.9	0.4
Laghman	Alingar	7,240	2,626	0	0	362.7	0.0	0.0
Kunar	Khas Kunar	1,826	590	6	6	323.1	3.3	3.3
Kunar	Chawkai	1,331	413	4	4	310.3	3.0	3.0
Kunar	Nur Gul	1,242	344	4	1	277.0	3.2	0.8
Badakhshan	Jurm	12,297	1,948	2	2	158.4	0.2	0.2
Badakhshan	Baharak	10,393	1,658	0	0	159.5	0.0	0.0
Badakhshan	Keshem	91,062	3,524	30	12	38.7	0.3	0.1
Takhar	Rustaq	65,070	5,949	115	0	91.4	1.8	0.0
Takhar	Farkhar	4,627	785	0	0	169.7	0.0	0.0
Baghlan	Pul-e Khumri	28,912	2,317	103	41	80.1	3.6	1.4
Baghlan	Nahrin	18,968	2,024	5	1	106.7	0.3	0.1
Baghlan	Anderab	20,145	4,067	18	17	201.9	0.9	0.8
Kunduz	Imam Sahib	27,842	3,657	114	86	131.3	4.1	3.1
Kunduz	Char Dara	15,200	1,940	77	21	127.6	5.1	1.4
Samangan	Smanagan	62,701	3,684	103	6	58.8	1.6	0.1
Samangan	Khulm	18,528	376	84	11	20.3	4.5	0.6
Balkh	Balkh center	32,201	1,132	61	40	35.2	1.9	1.2
Balkh	Nahr-e Shahi	35,786	536	75	2	15.0	2.1	0.1
Balkh	Dehdadi	7,674	658	103	7	85.7	13.4	0.9

Table8: Farm power mechanization status in relation to area under crop cultivation

Province	District	Total area under cultivation (ha)	Total number of pair of oxen	Total number of tractors	Total number of threshers	Average number of pair of oxen / 1000 ha	Average number of tractor / 1000 ha	Average number of thresher / 1000 ha
Balkh	Sholgara	43,796	2,202	67	0	50.3	1.5	0.0
Jawzjan	Sang Charak	116,468	1,639	2	0	14.1	0.0	0.0
Jawzjan	Aqcha	71,696	1,363	68	5	19.0	0.9	0.1
Faryab	Pashtun Kot	122,777	2,742	2	0	22.3	0.0	0.0
Faryab	Almar	12,714	669	0	0	52.6	0.0	0.0
Faryab	Shirin Taqab	22,089	1,705	10	1	77.2	0.5	0.0
Badghis	Murghab	13,675	831	2	0	60.8	0.1	0.0
Badghis	Qadis	72,930	1,628	0	0	22.3	0.0	0.0
Herat	Enjil	13,620	3,213	10	0	235.9	0.7	0.0
Herat	Gozara	12,247	2,210	1	0	180.5	0.1	0.0
Herat	Pashtun Zarghun	31,941	3,465	8	2	108.5	0.3	0.1
Herat	Obeh	30,627	2,501	5	0	81.7	0.2	0.0
Farah	Anar Dara	11,420	29	40	0	2.5	3.5	0.0
Farah	Bala Buluk	5,172	360	20	0	69.6	3.9	0.0
Nimroz	Khash Rod	22,925	13	54	0	0.6	2.4	0.0
Helmand	Nahr-e Saraj	31,962	765	335	32	23.9	10.5	1.0
Helmand	Naw Zad	10,475	402	205	0	38.4	19.6	0.0
Qandahar	Dand	30,344	9	145	5	0.3	4.8	0.2
Qandahar	Arghandab	19,718	66	72	10	3.3	3.7	0.5
Qandahar	Panjwai	32,078	10	212	56	0.3	6.6	1.7
Qandahar	Shah Wali Kot	14,816	351	116	4	23.7	7.8	0.3
Zabul	Mizan	10,761	481	45	2	44.7	4.2	0.2
Zabul	Shah Jui	19,089	75	192	0	3.9	10.1	0.0
Zabul	Arghandab	15,214	361	20	0	23.7	1.3	0.0
Uruzgan	Khas Uruzgan	10,234	2,089	7	0	204.1	0.7	0.0
Uruzgan	Deh Rawod	9,011	1,638	23	1	181.8	2.6	0.1
Uruzgan	Choreh	10,135	527	1	0	52.0	0.1	0.0
Ghor	Saghar	10,114	1,334	0	0	131.9	0.0	0.0
Ghor	Taiwara	17,567	3,709	0	0	211.1	0.0	0.0
Bamyan	Kahmard	8,239	1,796	6	2	218.0	0.7	0.2
Bamyan	Saighan	7,229	1,234	0	0	170.7	0.0	0.0
Total		1,679,589	96,956	4,392	676	57.7	2.6	0.4

Table9: Land use in horticulture

Province	District	Arable land (rainfed + irrigated)				Irrigated land			
		Total arable land (ha)	% arable land in orchards	% arable land under vegetable	Total % of arable land under horticultural crops	Total irrigated land (ha)	% of irrigated land in orchards	% of irrigated land under vegetable crops	Total % of irrigated land under horticultural crops
Kabul	Bagrami	14079	1.8	2.7	4.5	7644	3.3	5.0	8.3
Kabul	Shakar Dara	8830	22.0	7.8	29.8	7743	25.1	8.9	34.0
Kabul	Mir Bacha Kot	3956	16.3	7.3	23.6	3955	16.3	7.3	23.6
Kabul	Qarabagh	3751	15.6	4.2	19.8	2600	22.5	6.0	28.5
Kapisa	Tagab	3082	35.1	12.9	48.0	2777	39.0	14.3	53.3
Kapisa	Nijrab	6604	11.9	10.5	22.4	3091	25.4	22.4	47.8
Parwan	Ghorband	5566	11.5	4.2	15.7	5509	11.7	4.2	15.9
Parwan	Bagram	4702	41.9	4.8	46.7	4502	43.8	5.1	48.9
Wardak	Nirkh	5387	26.5	17.9	44.4	5117	27.9	18.9	46.8
Wardak	Chak	4752	16.3	8.1	24.4	4315	18.0	8.9	26.9
Wardak	Sayedabad	18842	4.0	6.8	10.8	13255	5.6	9.7	15.3
Logar	Baraki	14271	1.4	3.1	4.5	6025	3.4	7.4	10.8
Logar	Khoshi	2786	7.3	5.3	12.6	994	20.3	14.8	35.1
Logar	Charkh	2791	19.8	3.8	23.6	1972	28.0	5.4	33.4
Logar	Muhammad Agha	9834	8.4	11.3	19.7	7318	11.2	15.1	26.3
Ghazni	Jaghuri	29444	7.5	2.1	9.6	22750	9.7	2.7	12.4
Ghazni	Qarabagh	124047	0.7	0.7	1.4	77234	1.2	1.2	2.4
Paktika	Sharan	12073	1.1	0.7	1.8	10670	1.3	0.8	2.1
Paktika	Urgun	4847	4.5	11.2	15.7	4847	4.5	11.2	15.7
Paktia	Mandozai	3975	2.5	7.2	9.7	1124	9.0	25.4	34.4
Paktia	Nadir Shah Kot	3066	7.8	5.3	13.1	2661	9.0	6.2	15.2
Paktia	Zurmat	29964	1.3	0.9	2.2	16354	2.3	1.7	4.0
Nangarhar	Sorkh Rod	6352	5.0	19.8	24.8	5510	5.7	22.9	28.6
Nangarhar	Behsud	5898	1.5	15.8	17.3	5394	1.6	17.2	18.8
Nangarhar	Hesarak	3300	5.2	5.4	10.6	3046	5.7	5.8	11.5
Nangarhar	Khogiani	12359	2.1	2.2	4.3	6415	4.0	4.2	8.2
Nangarhar	Sherzad	2077	12.4	11.4	23.8	1861	13.9	12.7	26.6
Laghman	Mehtarlam	4185	5.7	19.9	25.6	4029	5.9	20.6	26.5
Laghman	Qaraghayi	4641	3.1	6.7	9.8	4601	3.2	6.8	10.0
Laghman	Alingar	7240	23.3	7.3	30.6	7191	23.4	7.4	30.8
Kunar	Khas Kunar	1826	14.2	5.7	19.9	1470	17.7	7.1	24.8
Kunar	Chawkai	1331	13.7	3.9	17.6	821	22.2	6.3	28.5
Kunar	Nur Gul	1242	5.9	3.1	9.0	933	7.8	4.2	12.0
Badakhshan	Jurm	12297	3.7	3.9	7.6	3980	11.5	12.0	23.5
Badakhshan	Baharak	10393	3.9	1.5	5.4	7987	5.0	2.0	7.0
Badakhshan	Keshem	91062	0.6	0.9	1.5	0			
Takhar	Rustaq	65070	0.4	4.3	4.7	0			
Takhar	Farkhar	4627	5.3	8.2	13.5	0			
Baghlan	Pul-e Khumri	28912	0.3	1.2	1.5	19592	0.5	1.8	2.3
Baghlan	Nahrin	18968	1.4	4.3	5.7	0			

The dark cells in the **Irrigated land** are not applicable because some of the horticultural crops are rainfed (e.g.. Watermelon)

CHAPTER 1: INTRODUCTION AND SURVEY METHODOLOGY

1. 1. INTRODUCTION

Though there was limited support from Government institutions before the war to promote the development of the horticultural sector, this sector was already playing an important role in the Afghan economy as it was contributing over 40% to total export earnings of the country. These outstanding economical results were achieved though horticultural crops were cultivated only on 6% of total arable land (12% of irrigated land) and exports of horticultural products were limited to fresh and dried fruits and melons since other vegetable exports were completely embargoed at that time.

With the event of war that started in December 1979 the horticultural sector registered a rapid decline of activities. The exodus of rural populations fleeing the conflict resulted in the abandonment and looting of many orchards and nurseries, a loss of vegetable seed stocks, a lack of maintenance of irrigation networks, and a total disruption of marketing channels. A gradual return of refugees was observed at the beginning of the 90s when most programmes of assistance were essentially based on emergency relief oriented strategies. Though these programmes significantly contributed to encourage the return of refugees their main objectives and related activities were mostly of a short-term nature and with little consideration to medium and long-term rehabilitation and development planning.

Starting from the mid-90s it was deemed necessary to implement this baseline field survey and study in order to:

- Assess the actual status of the horticultural sector after several years of war and also to;
- Assess progresses that were effectively achieved for its rehabilitation (in comparison to pre-war status).

It must also be noted that all pre-war surveys or studies on the horticultural sector were mostly based on 'desk reviews' of data collected from various governmental institutions and not from direct field data collection. This field survey of the horticultural sector is actually the first of this type ever conducted in Afghanistan. This survey as such is also not limiting itself to the study of horticultural crops and it is also addressing other aspects of the socio-economic context of Afghanistan that have strong implications on the overall development of the horticultural sector as well. It is therefore hoped that this survey can be instrumental as a basis for the purpose of a more rational and cost effective medium and long term planning of activities for the rehabilitation and sustainable development of the horticultural sector in Afghanistan.

Table9: Land use in horticulture

Province	District	Arable land (rainfed + irrigated)				Irrigated land			
		Total arable land (ha)	% arable land in orchards	% arable land under vegetable	Total % of arable land under horticultural crops	Total irrigated land (ha)	% of irrigated land in orchards	% of irrigated land under vegetable crops	Total % of irrigated land under horticultural crops
Baghlan	Anderab	20145	0.8	0.6	1.4	11228	1.4	1.1	2.5
Kunduz	Imam Sahib	27842	1.0	8.1	9.1	26380	1.0	8.6	9.6
Kunduz	Char Dara	15200	8.7	7.2	15.9	15200	8.7	7.2	15.9
Samangan	Smanagan	62701	2.2	1.2	3.4	0			
Samangan	Khulm	18528	5.0	1.7	6.7	14465	6.4	2.2	8.6
Balkh	Balkh center	32201	3.2	1.9	5.1	32151	3.2	1.9	5.1
Balkh	Nahr-e Shahi	35786	4.3	0.9	5.2	23648	6.5	1.3	7.8
Balkh	Dehdadi	7674	6.5	13.0	19.5	7674	6.5	13.0	19.5
Balkh	Sholgara	43796	0.4	1.3	1.7	4614	4.0	12.8	16.8
Jawzjan	Sang Charak	116468	2.4	5.3	7.7	0			
Jawzjan	Aqcha	71696	0.2	18.2	18.4	0			
Faryab	Pashtun Kot	122777	0.2	3.5	3.7	0			
Faryab	Almar	12714	4.6	9.9	14.5	0			
Faryab	Shirin Taqab	22089	8.8	26.4	35.2	0			
Badghis	Murghab	13675	1.7	7.1	8.8	0			
Badghis	Qadis	72930	0.5	4.5	5.0	0			
Herat	Enjil	13620	4.5	7.3	11.8	13078	4.7	7.6	12.3
Herat	Gozara	12247	20.4	7.3	27.7	12155	20.6	7.4	28.0
Herat	Pashtun Zarghun	31941	4.0	5.0	9.0	22471	5.7	7.2	12.9
Herat	Obeh	30627	1.8	2.3	4.1	11647	4.6	6.0	10.6
Farah	Anar Dara	11420	2.0	0.9	2.9	10823	2.1	0.9	3.0
Farah	Bala Buluk	5172	2.8	1.4	4.2	5132	2.8	1.4	4.2
Nimroz	Khash Rod	22925	0.3	0.3	0.6	22565	0.3	0.3	0.6
Helmand	Nahr-e Saraj	31962	4.4	4.3	8.7	31107	4.6	4.4	9.0
Helmand	Naw Zad	10475	6.7	2.8	9.5	9967	7.0	2.9	9.9
Qandahar	Dand	30344	14.9	2.2	17.1	29155	15.5	2.3	17.8
Qandahar	Arghandab	19718	35.1	14.7	49.8	14168	48.8	20.5	69.3
Qandahar	Panjwai	32078	40.7	2.7	43.4	30638	42.6	2.9	45.5
Qandahar	Shah Wali Kot	14816	13.2	2.2	15.4	11328	17.3	2.9	20.2
Zabul	Mizan	10761	25.2	0.2	25.4	7375	36.8	0.2	37.0
Zabul	Shah Jui	19089	24.1	2.4	26.5	19059	24.2	2.4	26.6
Zabul	Arghandab	15214	25.7	4.8	30.5	13487	29.0	5.4	34.4
Uruzgan	Khas Uruzgan	10234	12.1	3.2	15.3	9643	12.8	3.4	16.2
Uruzgan	Deh Rawod	9011	9.0	2.7	11.7	7999	10.1	3.0	13.1
Uruzgan	Choreh	10135	27.4	2.0	29.4	5576	49.8	3.6	53.4
Ghor	Saghar	10114	6.9	2.7	9.6	3998	17.5	6.9	24.4
Ghor	Taiwara	17567	1.3	2.0	3.3	9927	2.2	3.5	5.7
Bamyan	Kahmard	8239	11.1	5.4	16.5	3801	24.0	11.7	35.7
Bamyan	Saighan	7229	3.5	6.7	10.2	3109	8.1	15.5	23.6
Total		1679589	5.3	4.6	9.9	728855	10.9	5.1	16.0

The dark cells in the **Irrigated land** are not applicable because some of the horticultural crops are rainfed (e.g. Watermelon)

Table10: Comparative status of orchards per district between 1978 and 1996

Province	District	Total area under orchards in 1978 (ha)	Total area under orchards in 1996 (ha)	% Increase / decrease between 1978 and 1996	(in % of orchard area per range of age)			Number of nurseries in the district
					0-5 Years	5-15 Years	More than 15 years	
Kabul	Bagrami	580	256	-55.9	4.5	3.7	91.8	14
Kabul	Shakar Dara	1,523	1,941	27.4	16.2	17.0	66.8	25
Kabul	Mir Bacha Kot	1,687	645	-61.8	24.8	23.4	51.8	0
Kabul	Qarabagh	727	584	-19.7	0.0	0.0	100.0	0
Kapisa	Tagab	1,585	1,083	-31.7	27.6	42.6	29.8	1
Kapisa	Nijrab	893	786	-12.0	18.0	18.0	64.0	0
Parwan	Ghorband	1,270	642	-49.4	51.7	12.1	36.2	14
Parwan	Bagram	2,046	1,970	-3.7	0.3	0.1	99.6	0
Wardak	Nirkh	343	1,428	316.3	31.3	35.9	32.8	84
Wardak	Chak	246	776	215.4	44.3	24.2	31.6	124
Wardak	Sayedabad	316	747	136.4	43.5	33.8	22.7	97
Logar	Baraki	64	206	221.9	27.9	33.7	38.5	27
Logar	Khoshi	153	202	32.0	22.3	28.1	49.6	13
Logar	Charkh	417	552	32.4	8.4	19.2	72.4	15
Logar	Muhammad Agha	853	823	-3.5	31.2	1.1	67.8	17
Ghazni	Jaghuri	493	2,205	347.3	44.1	38.5	17.4	121
Ghazni	Qarabagh	397	911	129.5	25.8	33.2	41.0	14
Paktika	Sharan	79	138	74.7	65.0	6.6	28.4	5
Paktika	Urgun	122	217	77.9	55.9	3.0	41.0	11
Paktia	Mandozai	206	101	-51.0	74.2	6.0	19.8	0
Paktia	Nadir Shah Kot	268	239	-10.8	48.1	0.3	51.6	37
Paktia	Zurmat	254	381	50.0	28.9	5.9	65.1	25
Nangarhar	Sorkh Rod	386	315	-18.4	47.4	10.0	42.6	14
Nangarhar	Behsud	131	87	-33.6	44.8	4.1	51.1	10
Nangarhar	Hesarak	128	173	35.2	32.9	29.9	37.3	35
Nangarhar	Khogiani	427	257	-39.8	49.7	37.0	13.3	4
Nangarhar	Sherzad	263	258	-1.9	14.6	22.9	62.6	18
Laghman	Mehtarlam	370	237	-35.9	20.4	35.9	43.6	6
Laghman	Qaraghayi	178	146	-18.0	3.2	2.1	94.6	1
Laghman	Alingar	3,014	1,685	-44.1	23.8	17.2	58.9	1
Kunar	Khas Kunar	283	260	-8.1	8.6	7.0	84.3	1
Kunar	Chawkai	168	182	8.3	12.2	14.0	73.8	1
Kunar	Nur Gul	85	73	-14.1	16.8	23.2	60.0	1
Badakhshan	Jurm	208	456	119.2	20.4	32.7	46.9	0
Badakhshan	Baharak	504	402	-20.2	2.9	47.6	49.5	6
Badakhshan	Keshem	472	504	6.8	1.5	3.8	94.7	1
Takhar	Rustaq	191	231	20.9	56.9	21.8	21.3	1
Takhar	Farkhar	282	244	-13.5	11.4	21.2	67.4	3
Baghlan	Pul-e Khumri	384	95	-75.3	8.7	61.6	29.8	1
Baghlan	Nahrin	196	260	32.7	15.5	41.5	43.0	1

Table10: Comparative status of orchards per district between 1978 and 1996

Province	District	Total area under orchards in 1978 (ha)	Total area under orchards in 1996 (ha)	% Increase / decrease between 1978 and 1996	(in % of orchard area per range of age)			Number of nurseries in the district
					0-5 Years	5-15 Years	More than 15 years	
Baghlan	Anderab	137	156	13.9	3.6	50.3	46.0	1
Kunduz	Imam Sahib	96	272	183.3	30.8	34.7	34.4	0
Kunduz	Char Dara	895	1,321	47.6	19.6	14.2	66.2	0
Samangan	Smanagan	1,366	1,394	2.0	6.4	49.0	44.6	0
Samangan	Khulm	766	920	20.1	28.6	56.9	14.5	35
Balkh	Balkh center	742	1,030	38.8	15.0	70.0	15.0	0
Balkh	Nahr-e Shahi	1,872	1,541	-17.7	7.1	42.8	50.1	1
Balkh	Dehdadi	491	498	1.4	26.6	36.6	36.8	0
Balkh	Sholgara	145	185	27.6	20.7	41.4	37.8	0
Jawzjan	Sang Charak	2,441	2,786	14.1	6.2	9.2	84.6	0
Jawzjan	Aqcha	161	129	-19.9	13.8	10.0	76.2	0
Faryab	Pashtun Kot	284	245	-13.7	8.1	14.4	77.5	0
Faryab	Almar	455	581	27.7	21.3	54.4	24.3	2
Faryab	Shirin Taqab	1,426	1,933	35.6	23.9	51.0	25.0	1
Badghis	Murghab	169	232	37.3	30.4	43.5	26.0	0
Badghis	Qadis	368	400	8.7	25.0	56.3	18.7	0
Herat	Enjil	540	614	13.7	10.1	5.1	84.9	1
Herat	Gozara	2,459	2,503	1.8	2.0	1.7	96.3	11
Herat	Pashtun Zarghun	882	1,280	45.1	17.0	9.9	73.1	10
Herat	Obeh	816	537	-34.2	16.5	28.7	54.8	19
Farah	Anar Dara	222	225	1.4	1.4	1.3	97.3	0
Farah	Bala Buluk	120	144	20.0	10.7	40.6	48.7	0
Nimroz	Khash Rod	80	64	-20.0	9.4	9.4	81.2	1
Helmand	Nahr-e Saraj	4,241	1,418	-66.6	7.6	0.4	92.0	1
Helmand	Naw Zad	384	698	81.8	22.4	29.7	47.9	39
Qandahar	Dand	5,220	4,513	-13.5	23.9	0.3	75.8	1
Qandahar	Arghandab	5,482	6,913	26.1	10.7	5.2	84.0	14
Qandahar	Panjwai	9,305	13,054	40.3	27.5	10.8	61.7	2
Qandahar	Shah Wali Kot	1,732	1,962	13.3	14.9	7.3	77.8	11
Zabul	Mizan	1,037	2,717	162.0	13.6	20.0	66.4	17
Zabul	Shah Jui	1,250	4,609	268.7	31.6	22.8	45.6	13
Zabul	Arghandab	2,719	3,908	43.7	15.0	22.7	62.3	79
Uruzgan	Khas Uruzgan	543	1,238	128.0	33.7	24.2	42.0	83
Uruzgan	Deh Rawod	226	809	258.0	27.6	47.5	24.9	12
Uruzgan	Choreh	2,114	2,777	31.4	24.2	48.6	27.2	68
Ghor	Saghar	416	701	68.5	16.3	28.9	54.7	18
Ghor	Taiwara	148	221	49.3	37.7	15.3	47.0	16
Bamyan	Kahmard	805	911	13.2	14.3	39.7	46.0	0
Bamyan	Saighan	171	252	47.4	24.3	30.4	45.3	1
Total		74,918	88,389	18.0	20.8	20.1	59.1	1,206

table 11. Comparative status of orchards per fruit species between 1978 and 1996.

Fruit Species	Total Area 1n 1978 ha	Total Area in 1996 ha	% Total Area, 1996	% Increase /Decrease 1978-1996	% Orchard Area per range of Age 0-5 Years	5-15 Years	More Than 15 Years
Fruit Species Cultivated in Intensive Orchards							
Grape	33,766	38,190	48.4	13.1	15.4	12.2	72.4
Almond	9,551	15,493	19.6	62.2	21.3	28.4	50.3
Apricot	8,292	10,164	12.9	22.6	25.9	29.1	45
Apple	3,581	6,189	7.8	72.8	35.3	31.5	33.2
Pomegranate	5,469	5,668	7.2	3.6	24.7	16.8	58.5
Peach	1,046	1,447	1.8	38.3	40.7	33.8	25.5
Plum	608	746	0.9	22.7	30.8	26.6	42.6
Pear	445	396	0.5	-11	25.1	36.2	38.8
Sour Cherry	358	264	0.3	-26.3	24.1	36.1	39.7
Sour Orange	187	113	0.1	-39.6	26.5	16.2	57.3
Sweet Cherry	65	62	0.1	-4.6	17.4	59.3	23.3
Loquat	99	57	0.1	-42.4	40.6	17.3	42.1
Persimmon	22	30	0	36.4	25.3	22.4	52.4
Sweet Orange	40	21	0	-47.5	36.3	1.6	62.1
Guava	2	6	0	200	93.3	3.3	3.3
Lemon	3	3	0	0	46.7	40	13.3
Lime	2	1	0	-50	28.6	0	71.4
Total	63,536	78,850		24.1			
Fruit Species Growing on Marginal Land							
Mulberry	28,616	17,674	81.4	-38.2			
Walnut	3,249	2,398	11	-26.2			
Fig	1,141	1,104	5.1	-3.2			
Quince	268	241	1.1	-10.1			
Russian Olive	252	215	1	-14.7			
Jujube	90	91	0.4	1.1			
Total	33,616	21,723		-35.4			

Table12: Status of fruit crop management practices

Province	District	% of villages where farmers practice tree training & pruning	% if villages where farmers use chemical fertilizer	% of villages where farmers control pests and diseases	% of villages where farmers use improved cultivars
Kabul	Bagrami	20.8	20.7	20.1	17.8
Kabul	Shakar Dara	20.0	18.1	21.5	20.4
Kabul	Mir Bacha Kot	20.7	16.6	21.0	21.0
Kabul	Qarabagh	25.3	25.2	24.3	0.0
Kapisa	Tagab	32.5	32.9	1.4	0.7
Kapisa	Nijrab	34.7	12.3	17.4	0.9
Parwan	Ghorband	19.9	21.5	21.9	16.8
Parwan	Bagram	23.9	23.9	23.6	4.6
Wardak	Nirkh	21.1	21.1	15.7	20.9
Wardak	Chak	21.1	18.5	17.9	21.4
Wardak	Sayedabad	20.0	19.9	20.4	19.9
Logar	Baraki	20.3	19.8	19.0	20.6
Logar	Khoshi	20.0	12.6	27.9	19.7
Logar	Charkh	21.0	17.7	20.6	19.9
Logar	Muhammad Agha	21.1	17.1	20.3	20.3
Ghazni	Jaghuri	21.9	13.4	17.2	25.6
Ghazni	Qarabagh	22.3	16.8	26.3	12.4
Paktika	Sharan	19.8	16.3	20.9	23.3
Paktika	Urgun	20.4	16.4	19.5	23.2
Paktia	Mandozai	25.6	3.9	19.2	25.8
Paktia	Nadir Shah Kot	25.7	4.8	18.3	25.7
Paktia	Zurmat	23.6	7.8	24.6	20.5
Nangarhar	Sorkh Rod	21.5	18.5	17.2	21.1
Nangarhar	Behsud	22.9	11.9	23.2	19.3
Nangarhar	Hesarak	15.1	1.4	67.1	1.4
Nangarhar	Khogiani	24.9	25.4	5.8	19.1
Nangarhar	Sherzad	22.9	22.6	22.3	9.5
Laghman	Mehtarlam	25.6	2.4	26.4	19.9
Laghman	Qaraghayi	8.3	8.3	33.3	41.7
Laghman	Alingar	15.0	40.0	20.0	10.0
Kunar	Khas Kunar	20.9	12.5	41.7	4.2
Kunar	Chawkai	19.0	7.8	46.5	7.8
Kunar	Nur Gul	36.4	6.8	20.5	0.0
Badakhshan	Jurm	33.2	0.0	33.2	0.3
Badakhshan	Baharak	16.6	0.0	33.8	33.1
Badakhshan	Keshem	17.2	0.0	65.7	0.0
Takhar	Rustaq	32.3	2.5	32.3	0.6
Takhar	Farkhar	27.0	6.6	19.0	20.4
Baghlan	Pul-e Khumri	25.7	0.0	0.0	48.6
Baghlan	Nahrin	25.6	13.3	21.1	14.4
Baghlan	Anderab	36.1	13.0	5.7	9.1
Kunduz	Imam Sahib	16.9	0.0	33.2	33.2
Kunduz	Char Dara	19.0	5.0	29.2	28.0
Samangan	Smanagan	33.1	0.0	32.4	1.4
Samangan	Khulm	25.5	3.3	22.0	23.7
Balkh	Balkh center	43.9	4.1	1.4	6.8
Balkh	Nahr-e Shahi	47.4	0.0	0.0	5.4
Balkh	Dehdadi	34.5	0.0	31.1	0.0
Balkh	Sholgara	32.3	5.4	26.9	3.2
Jawzjan	Sang Charak	50.0	0.0	0.0	0.0
Jawzjan	Aqcha	44.9	5.1	5.1	0.0
Faryab	Pashtun Kot	46.0	0.0	0.0	8.1
Faryab	Almar	31.7	2.0	19.8	14.9
Faryab	Shirin Taqab	34.5	0.9	27.9	2.3
Badghis	Murghab	34.1	0.0	19.4	12.4

Table12: Status of fruit crop management practices

Province	District	% of villages where farmers practice tree training & pruning	% if villages where farmers use chemical fertilizer	% of villages where farmers control pests and diseases	% of villages where farmers use improved cultivars
Badghis	Qadis	36.3	0.0	23.4	3.9
Herat	Enjil	26.2	22.8	24.3	0.5
Herat	Gozara	25.4	25.2	23.2	0.9
Herat	Pashtun Zarghun	32.7	9.0	24.8	0.8
Herat	Obeh	44.9	3.6	5.4	1.2
Farah	Anar Dara	50.0	0.0	0.0	0.0
Farah	Bala Buluk	40.4	8.5	10.6	0.0
Nimroz	Khash Rod	45.6	0.0	5.9	2.9
Helmand	Nahr-e Saraj	47.3	1.6	2.3	1.6
Helmand	Naw Zad	26.0	22.5	23.8	1.7
Qandahar	Dand	25.2	25.4	24.1	0.0
Qandahar	Arghandab	24.2	20.4	16.4	14.7
Qandahar	Panjwai	26.5	26.3	20.2	0.6
Qandahar	Shah Wali Kot	26.5	25.8	21.1	0.3
Zabul	Mizan	31.9	6.0	30.2	0.0
Zabul	Shah Jui	47.5	0.6	4.4	0.0
Zabul	Arghandab	29.0	6.3	24.3	11.4
Uruzgan	Khas Uruzgan	28.4	16.6	11.4	15.2
Uruzgan	Deh Rawod	26.5	25.8	21.2	0.0
Uruzgan	Choreh	26.7	20.3	26.1	0.3
Ghor	Saghar	32.5	0.0	35.1	0.0
Ghor	Taiwara	25.0	11.1	38.9	0.0
Bamyan	Kahmard	32.5	0.0	33.1	2.0
Bamyan	Saighan	20.7	17.4	21.6	19.8
Average		28.1	11.3	21.4	11.1

Table13: Bee keeping status in relation to fruit growing area in each district

Province	District	% of villages with bee keeper(s)	Total number of bee keeping families	Total number of beehives	Total area under fruit orchards (ha)	Average number of beehives/**1000** ha of orchard
Kabul	Bagrami	0.9	1	6	256	23.4
Kabul	Shakar Dara	1.2	20	65	1,941	33.5
Kabul	Mir Bacha Kot	0.0	0	0	645	0.0
Kabul	Qarabagh	5.6	7	225	584	385.3
Kapisa	Tagab	2.1	4	12	1,083	11.1
Kapisa	Nijrab	1.6	22	90	786	114.5
Parwan	Ghorband	7.1	10	48	642	74.8
Parwan	Bagram	0.0	0	0	1,970	0.0
Wardak	Nirkh	7.3	11	315	1,428	220.6
Wardak	Chak	38.8	163	2321	776	2991.0
Wardak	Sayedabad	30.4	88	895	747	1198.1
Logar	Baraki	12.6	34	1171	206	5684.5
Logar	Khoshi	20.6	26	1000	202	4950.5
Logar	Charkh	15.4	15	165	552	298.9
Logar	Muhammad Agha	10.9	21	284	823	345.1
Ghazni	Jaghuri	0.5	1	30	2,205	13.6
Ghazni	Qarabagh	2.9	19	253	911	277.7
Paktika	Sharan	0.0	0	0	138	0.0
Paktika	Urgun	6.8	7	49	217	225.8
Paktia	Mandozai	36.1	31	98	101	970.3
Paktia	Nadir Shah Kot	60.0	193	798	239	3338.9
Paktia	Zurmat	13.7	1227	2689	381	7057.7
Nangarhar	Sorkh Rod	4.5	2	122	315	387.3
Nangarhar	Behsud	1.1	1	150	87	1724.1
Nangarhar	Hesarak	0.0	0	0	173	0.0
Nangarhar	Khogiani	8.0	17	387	257	1505.8
Nangarhar	Sherzad	0.0	0	0	258	0.0
Laghman	Mehtarlam	0.0	0	0	237	0.0
Laghman	Qaraghayi	1.4	1	10	146	68.5
Laghman	Alingar	6.4	113	1079	1,685	640.4
Kunar	Khas Kunar	0.0	0	0	260	0.0
Kunar	Chawkai	1.4	1	60	182	329.7
Kunar	Nur Gul	19.5	94	191	73	2616.4
Badakhshan	Jurm	11.8	21	167	456	366.2
Badakhshan	Baharak	3.8	6	50	402	124.4
Badakhshan	Keshem	0.0	0	0	504	0.0
Takhar	Rustaq	0.0	0	0	231	0.0
Takhar	Farkhar	0.0	0	0	244	0.0
Baghlan	Pul-e Khumri	0.0	0	0	95	0.0
Baghlan	Nahrin	3.3	4	40	260	153.8
Baghlan	Anderab	2.2	2	130	156	833.3
Kunduz	Imam Sahib	0.0	0	0	272	0.0
Kunduz	Char Dara	1.5	1	10	1,321	7.6
Samangan	Smanagan	0.0	0	0	1,394	0.0
Samangan	Khulm	0.0	0	0	920	0.0
Balkh	Balkh center	0.0	0	0	1,030	0.0
Balkh	Nahr-e Shahi	0.0	0	0	1,541	0.0
Balkh	Dehdadi	5.3	22	37	498	74.3
Balkh	Sholgara	0.0	0	0	185	0.0
Jawzjan	Sang Charak	0.0	0	0	2,786	0.0
Jawzjan	Aqcha	0.0	0	0	129	0.0

Table13: Bee keeping status in relation to fruit growing area in each district

Province	District	% of villages with bee keeper(s)	Total number of bee keeping families	Total number of beehives	Total area under fruit orchards (ha)	Average number of beehives/**1000** ha of orchard
Faryab	Pashtun Kot	0.0	0	0	245	0.0
Faryab	Almar	0.0	0	0	581	0.0
Faryab	Shirin Taqab	0.0	0	0	1,933	0.0
Badghis	Murghab	0.0	0	0	232	0.0
Badghis	Qadis	0.0	0	0	400	0.0
Herat	Enjil	0.0	0	0	614	0.0
Herat	Gozara	0.0	0	0	2,503	0.0
Herat	Pashtun Zarghun	0.0	0	0	1,280	0.0
Herat	Obeh	0.0	0	0	537	0.0
Farah	Anar Dara	0.0	0	0	225	0.0
Farah	Bala Buluk	0.0	0	0	144	0.0
Nimroz	Khash Rod	0.0	0	0	64	0.0
Helmand	Nahr-e Saraj	0.0	0	0	1,418	0.0
Helmand	Naw Zad	0.0	0	0	698	0.0
Qandahar	Dand	0.0	0	0	4,513	0.0
Qandahar	Arghandab	7.3	10	32	6,913	4.6
Qandahar	Panjwai	0.0	0	0	13,054	0.0
Qandahar	Shah Wali Kot	1.0	1	2	1,962	1.0
Zabul	Mizan	0.0	0	0	2,717	0.0
Zabul	Shah Jui	0.0	0	0	4,609	0.0
Zabul	Arghandab	0.0	0	0	3,908	0.0
Uruzgan	Khas Uruzgan	0.0	0	0	1,238	0.0
Uruzgan	Deh Rawod	0.0	0	0	809	0.0
Uruzgan	Choreh	0.0	0	0	2,777	0.0
Ghor	Saghar	3.0	7	19	701	27.1
Ghor	Taiwara	0.0	0	0	221	0.0
Bamyan	Kahmard	0.0	0	0	911	0.0
Bamyan	Saighan	0.0	0	0	252	0.0
Total		4.5	2203	13000	88389	147.1

Table14: Comparative status of vegetable crops per district between 1978 and 1996

Province	District	Total area under vegetable crops in 1978 (ha)	Total area under vegetable crops in 1996 (ha)	% Increase / Decrease between 1978 and 1996
Kabul	Bagrami	825	383	-53.5
Kabul	Shakar Dara	252	686	172.7
Kabul	Mir Bacha Kot	663	287	-56.7
Kabul	Qarabagh	246	157	-36.1
Kapisa	Tagab	208	398	91.8
Kapisa	Nijrab	517	691	33.5
Parwan	Ghorband	705	231	-67.2
Parwan	Bagram	146	228	56.7
Wardak	Nirkh	406	965	137.7
Wardak	Chak	145	385	166.0
Wardak	Sayedabad	361	1283	255.1
Logar	Baraki	102	443	333.0
Logar	Khoshi	19	147	680.9
Logar	Charkh	58	106	82.8
Logar	Muhammad Agha	475	1107	133.1
Ghazni	Jaghuri	301	621	106.6
Ghazni	Qarabagh	479	929	94.1
Paktika	Sharan	53	84	58.9
Paktika	Urgun	286	545	90.2
Paktia	Mandozai	230	285	23.9
Paktia	Nadir Shah Kot	102	164	60.6
Paktia	Zurmat	229	282	22.9
Nangarhar	Sorkh Rod	705	1260	78.8
Nangarhar	Behsud	505	929	84.0
Nangarhar	Hesarak	113	177	55.9
Nangarhar	Khogiani	157	272	73.2
Nangarhar	Sherzad	94	236	150.6
Laghman	Mehtarlam	543	831	53.0
Laghman	Qaraghayi	144	312	116.7
Laghman	Alingar	359	531	48.0
Kunar	Khas Kunar	128	104	-19.2
Kunar	Chawkai	31	52	66.7
Kunar	Nur Gul	38	39	3.7
Badakhshan	Jurm	224	478	113.0
Badakhshan	Baharak	299	161	-46.1
Badakhshan	Keshem	592	801	35.3
Takhar	Rustaq	1465	2828	93.0
Takhar	Farkhar	161	379	136.2
Baghlan	Pul-e Khumri	520	355	-31.6
Baghlan	Nahrin	603	814	35.1
Baghlan	Anderab	158	124	-21.4
Kunduz	Imam Sahib	4659	2258	-51.5
Kunduz	Char Dara	2495	1094	-56.1
Samangan	Smanagan	655	750	14.6
Samangan	Khulm	360	324	-10.1
Balkh	Balkh center	348	609	74.8
Balkh	Nahr-e Shahi	1100	305	-72.3
Balkh	Dehdadi	802	998	24.5
Balkh	Sholgara	527	591	12.2

Table14: Comparative status of vegetable crops per district between 1978 and 1996

Province	District	Total area under vegetable crops in 1978 (ha)	Total area under vegetable crops in 1996 (ha)	% Increase / Decrease between 1978 and 1996
Jawzjan	Sang Charak	4980	6221	24.9
Jawzjan	Aqcha	8757	13039	48.9
Faryab	Pashtun Kot	2878	4276	48.6
Faryab	Almar	978	1265	29.3
Faryab	Shirin Taqab	4391	5837	32.9
Badghis	Murghab	817	970	18.7
Badghis	Qadis	2960	3301	11.5
Herat	Enjil	803	995	23.8
Herat	Gozara	861	897	4.3
Herat	Pashtun Zarghun	575	1609	180.0
Herat	Obeh	452	694	53.5
Farah	Anar Dara	2	102	5577.8
Farah	Bala Buluk	6	73	1120.0
Nimroz	Khash Rod	53	60	13.7
Helmand	Nahr-e Saraj	729	1364	87.0
Helmand	Naw Zad	149	291	94.8
Qandahar	Dand	413	682	65.0
Qandahar	Arghandab	1720	2904	68.9
Qandahar	Panjwai	521	882	69.3
Qandahar	Shah Wali Kot	94	328	250.2
Zabul	Mizan	13	17	25.4
Zabul	Shah Jui	294	465	58.2
Zabul	Arghandab	439	723	64.7
Uruzgan	Khas Uruzgan	164	324	97.8
Uruzgan	Deh Rawod	116	240	108.0
Uruzgan	Choreh	133	201	51.1
Ghor	Saghar	38	277	637.2
Ghor	Taiwara	98	346	252.7
Bamyan	Kahmard	340	444	30.5
Bamyan	Saighan	342	481	40.4
Total		58709.00	77327.00	31.7

1.2 METHODOLOGY

Basic Principles

1. For the purpose of this study it was deemed essential to collect genuine primary field data as no survey of this type has been carried out ever in the past.

2. Due to budget limitations this survey was carried out in only 79 districts out of a total of 294 districts and sub-districts throughout the whole country.

3. At least one district was selected in each of the 29 provinces of Afghanistan.

4. The 79 surveyed districts were selected on the basis of the relatively important role being played by horticultural crops in the local economy.

5. To get accurate and exhaustive district level data this survey was carried out at village level in all villages of each of the selected districts. Meanwhile, villages that were abandoned and where refugees had not yet returned could not be surveyed since there was no possibility of making group interviews.

6. Provinces and districts were coded according to the coding of UNIDATA/ Mapping Service[1].

7. There is no administrative delimitation of villages in Afghanistan. For the purpose of this survey a village was defined as an entity comprising 30 to 100 families from which a representative village group could be interviewed. Smaller villages (less than 30 families) were combined with other neighboring villages to meet group interview criteria. Surveyed villages received a specific coding for the specific purpose of this survey.

Operational Aspects

1. FAO conducted the field survey with the collaboration of the following Implementing Partners (IPs):
   - Mission d'Aide au Développement des Economies Rurales en Afghanistan - MADERA (eastern region);
   - Islamic Relief Agency - ISRA (south-central region);
   - Mercy Corps International - MCI (southern and western regions), and
   - Agency Coordinating Body for Afghan Relief-ACBAR (central and northern regions).

2. A preliminary theoretical and practical training course was delivered to IP enumerators by FAO technical staff in order to standardize their understanding of all questions listed in the questionnaire and to explain all details of the field survey methodology.

'Afghanistan Districts and Codes, by Province', UNIDATA/Mapping Service, Peshawar June 1990.

Table15: Comparative status of vegetable crops per species between 1978 and 1996

Main Vegetable species	Total area in 1978 (ha)	Total area in 1996 (ha)	% of Total Area in 1996	% Increase/ Decrease in between 1978 and 1996
Melon	24,534	29,021	38.00	18.3
Water melon	11,495	13,709	18.00	19.3
Onion	6,008	9,159	12.00	52.4
Potato	5,123	9,138	12.00	78.4
Tomato	4,284	5,682	7.40	32.6
Okra	1,561	2,610	3.40	67.2
Eggplant	1,264	1,857	2.40	46.9
Cucumber	1,084	1,597	2.10	47.3
Carrot	607	791	1.00	30.3
Turnip	492	581	0.80	18.1
Bean	444	490	0.60	10.4
Spinach	344	439	0.60	27.6
Cauliflower	218	374	0.50	71.6
Squash	174	240	0.30	37.9
Snake cucumber	128	167	0.20	30.5
Cumin	14	120	0.20	757.1
Hot pepper	55	78	0.10	41.8
Ridge gaurd	44	67	0.10	52.3
Pepper	44	58	0.10	31.8
Leek	48	42	0.10	-12.5
Pumpkin	31	37	0.00	19.4
Radish	20	30	0.00	50.0
Pea	8	10	0.00	25.0
Table beet	4	8	0.00	100.0
Garlic	1	4	0.00	300.0
Peanut	1	4	0.00	300.0
Coriander	2	2	0.00	0.0
Cabbage	1	1	0.00	0.0
Mustard	3	1	0.00	-66.7
Total	58,036	76,317		31.5

Table 16: Status of vegetable crop management practices

Province	District	% of villages where farmers use plastic tunnels	% of villages where farmers use chemical fertilizer	% of villages where farmers control pests and diseases	% of villages where farmers use improved seeds
Kabul	Bagrami	10.1	96.3	98.2	97.2
Kabul	Shakar Dara	65.1	97.6	97.6	96.4
Kabul	Mir Bacha Kot	62.6	100.0	100.0	100.0
Kabul	Qarabagh	0.0	98.1	94.4	9.3
Kapisa	Tagab	0.0	94.8	2.1	8.3
Kapisa	Nijrab	56.1	99.2	52.8	4.9
Parwan	Ghorband	80.4	100.0	100.0	100.0
Parwan	Bagram	2.9	100.0	100.0	100.0
Wardak	Nirkh	89.0	96.3	96.3	96.3
Wardak	Chak	21.4	84.6	58.2	58.2
Wardak	Sayedabad	36.1	84.2	84.2	6.3
Logar	Baraki	23.8	67.8	65.7	66.4
Logar	Khoshi	0.0	55.6	60.3	50.8
Logar	Charkh	26.2	64.6	81.5	63.1
Logar	Muhammad Agha	3.6	96.4	90.9	41.8
Ghazni	Jaghuri	0.0	71.7	33.7	9.8
Ghazni	Qarabagh	0.6	48.6	66.5	8.1
Paktika	Sharan	1.0	14.6	46.9	0.0
Paktika	Urgun	21.6	68.2	94.3	3.4
Paktia	Mandozai	91.8	21.3	75.4	91.8
Paktia	Nadir Shah Kot	91.7	76.7	66.7	95.0
Paktia	Zurmat	15.4	65.8	88.9	2.6
Nangarhar	Sorkh Rod	97.8	94.4	94.4	93.3
Nangarhar	Behsud	71.4	94.5	93.4	84.6
Nangarhar	Hesarak	9.4	18.9	81.1	9.4
Nangarhar	Khogiani	55.7	97.7	85.2	77.3
Nangarhar	Sherzad	79.2	100.0	97.4	96.1
Laghman	Mehtarlam	78.6	93.2	47.9	77.8
Laghman	Qaraghayi	0.0	90.4	87.7	93.2
Laghman	Alingar	1.2	42.7	6.4	4.7
Kunar	Khas Kunar	28.2	56.4	76.9	12.8
Kunar	Chawkai	0.0	73.9	55.1	23.2
Kunar	Nur Gul	0.0	48.8	39.0	34.1
Badakhshan	Jurm	0.0	1.0	99.0	0.0
Badakhshan	Baharak	0.0	0.0	90.4	88.5
Badakhshan	Keshem	0.0	37.0	84.9	0.0
Takhar	Rustaq	0.0	0.8	86.4	3.4
Takhar	Farkhar	4.5	42.0	58.0	50.0
Baghlan	Pul-e Khumri	0.0	3.7	1.2	85.2
Baghlan	Nahrin	0.0	67.0	61.5	2.2
Baghlan	Anderab	0.0	53.8	26.9	2.2
Kunduz	Imam Sahib	0.0	31.1	90.0	8.9
Kunduz	Char Dara	0.0	89.6	91.0	38.8
Samangan	Smanagan	0.0	20.0	78.7	20.0
Samangan	Khulm	49.4	11.1	63.0	74.1
Balkh	Balkh center	72.6	58.9	6.8	0.0
Balkh	Nahr-e Shahi	18.3	15.0	33.3	1.7
Balkh	Dehdadi	54.4	0.0	96.5	0.0
Balkh	Sholgara	13.0	27.5	63.8	8.7
Jawzjan	Sang Charak	0.0	1.1	0.0	0.0
Jawzjan	Aqcha	0.0	0.0	3.1	0.0
Faryab	Pashtun Kot	0.0	0.0	2.5	0.0
Faryab	Almar	0.0	2.9	65.7	62.9
Faryab	Shirin Taqab	0.0	2.0	68.0	0.0
Badghis	Murghab	0.0	3.8	93.7	0.0

Table 16: Status of vegetable crop management practices

Province	District	% of villages where farmers use plastic tunnels	% of villages where farmers use chemical fertilizer	% of villages where farmers control pests and diseases	% of villages where farmers use improved seeds
Badghis	Qadis	0.0	0.0	88.3	11.7
Herat	Enjil	32.4	76.8	76.1	3.5
Herat	Gozara	77.6	81.0	86.2	2.6
Herat	Pashtun Zarghun	0.9	13.2	21.7	1.9
Herat	Obeh	2.3	6.8	6.8	0.0
Farah	Anar Dara	0.0	0.0	0.0	0.0
Farah	Bala Buluk	0.0	5.9	3.9	0.0
Nimroz	Khash Rod	2.7	0.0	2.7	0.0
Helmand	Nahr-e Saraj	1.4	0.0	1.4	0.0
Helmand	Naw Zad	0.0	49.5	44.0	46.2
Qandahar	Dand	0.0	82.9	88.2	3.9
Qandahar	Arghandab	0.0	92.7	83.6	63.6
Qandahar	Panjwai	0.0	24.1	58.6	3.4
Qandahar	Shah Wali Kot	0.0	53.1	42.9	2.0
Zabul	Mizan	0.0	5.0	6.7	0.0
Zabul	Shah Jui	0.0	0.0	12.7	0.0
Zabul	Arghandab	0.0	13.0	58.7	38.0
Uruzgan	Khas Uruzgan	0.0	42.5	43.4	0.0
Uruzgan	Deh Rawod	0.0	45.9	47.5	0.0
Uruzgan	Choreh	0.0	75.3	75.3	0.0
Ghor	Saghar	0.0	0.0	1.5	0.0
Ghor	Taiwara	2.3	7.0	16.3	0.0
Bamyan	Kahmard	0.0	4.0	100.0	4.0
Bamyan	Saighan	0.0	66.0	72.3	2.1
Average		18.4	47.2	59.8	29.7

Table17: Ranking of problems associated to horticultural crop cultivation in each district

Province	District	Lack of irrigation water	Prevalence of disease	Prevalence of insects	Prevalence of noxious of weeds	Lack of farmers market cooperative	Lack of improved varieties of fruit and nut	Lack of improved vegetable seeds	Smallness of farm size per family
Kabul	Bagrami	1	3	2	7	4	5	6	8
Kabul	Shakar Dara	3	1	2	4	5	8	6	7
Kabul	Mir Bacha Kot	1	5	4	7	6	3	2	8
Kabul	Qarabagh	1	7	6	4	5	2	3	8
Kapisa	Tagab	1	2	3	6	4	5	7	8
Kapisa	Nijrab	1	4	2	7	6	3	5	8
Parwan	Ghorband	1	3	2	5	4	8	7	6
Parwan	Bagram	2	1	3	5	4	8	7	6
Wardak	Nirkh	1	4	3	5	2	6	7	8
Wardak	Chak	1	2	4	5	3	7	6	8
Wardak	Sayedabad	1	3	5	4	7	6	2	8
Logar	Baraki	1	2	4	6	7	5	3	8
Logar	Khoshi	1	4	7	8	3	2	5	6
Logar	Charkh	2	1	3	5	4	7	8	6
Logar	Muhammad Agha	2	3	4	6	5	7	8	1
Ghazni	Jaghuri	1	5	4	6	8	2	3	7
Ghazni	Qarabagh	1	3	5	6	2	7	4	8
Paktika	Sharan	1	4	5	6	7	2	3	8
Paktika	Urgun	3	7	6	5	8	1	2	4
Paktia	Mandozai	6	5	3	4	8	1	2	7
Paktia	Nadir Shah Kot	8	5	4	3	6	1	2	7
Paktia	Zurmat	1	2	3	6	7	4	5	8
Nangarhar	Sorkh Rod	2	1	3	4	7	6	5	8
Nangarhar	Behsud	3	5	2	6	4	7	1	8
Nangarhar	Hesarak	1	2	3	7	4	5	6	8
Nangarhar	Khogiani	1	2	3	5	4	6	7	8
Nangarhar	Sherzad	2	5	6	7	4	8	3	1
Laghman	Mehtarlam	6	4	8	3	5	1	2	7
Laghman	Qaraghayi	6	4	3	5	7	2	1	8
Laghman	Alingar	2	5	4	6	7	1	3	8
Kunar	Khas Kunar	1	3	4	5	6	7	2	8
Kunar	Chawkai	3	4	5	7	2	8	1	6
Kunar	Nur Gul	4	5	6	8	7	3	2	1
Badakhshan	Jurm	1	2	3	7	6	4	5	
Badakhshan	Baharak		1	2	6	7	3	4	5
Badakhshan	Keshem	3	7	5	1	2	8	6	4
Takhar	Rustaq	1	3	2	5	6	8	7	4
Takhar	Farkhar	5	1	3	8	7	4	6	2
Baghlan	Pul-e Khumri	5	1	3	7	6	2	4	8
Baghlan	Nahrin	1	6	3	4	7	8	5	2

Table17: Ranking of problems associated to horticultural crop cultivation in each district

Province	District	Lack of irrigation water	Prevalence of disease	Prevalence of insects	Prevalence of noxious of weeds	Lack of farmers market cooperative	Lack of improved varieties of fruit and nut	Lack of improved vegetable seeds	Smallness of farm size per family
Baghlan	Anderab	1	5	6	3	2	4	8	7
Kunduz	Imam Sahib	1	5	4	3	2	7	6	
Kunduz	Char Dara	2	3	4	5	1	6	8	7
Samangan	Smanagan	2	6	4	1	7	3	5	8
Samangan	Khulm	1	3	2	6	4	8	7	5
Balkh	Balkh center		3	1	6	5	2	4	7
Balkh	Nahr-e Shahi	1		6	2	5	3	4	
Balkh	Dehdadi	1	4	2	3	8	5	6	7
Balkh	Sholgara	1	2	3	6	5	7	8	4
Jawzjan	Sang Charak	3	4	5	6	7	1	2	8
Jawzjan	Aqcha	1	4	5	6	7	2	3	8
Faryab	Pashtun Kot	4	2	3	8	5	6	7	1
Faryab	Almar	1	5	3	2	6	8	7	4
Faryab	Shirin Taqab	1	2	3	6	5	8	7	4
Badghis	Murghab	1	4	2	5	7	8	6	3
Badghis	Qadis	2	7	5	3	6	8	4	1
Herat	Enjil	1	7	4	6	8	3	2	5
Herat	Gozara	1	5	6			2	3	4
Herat	Pashtun Zarghun	1	4	3	2	7	6	5	8
Herat	Obeh	1	3	4	5	7	6	2	8
Farah	Anar Dara	1	2	3	8	4	6	7	5
Farah	Bala Buluk	1	2	3	5	4	8	7	6
Nimroz	Khash Rod	1	6	7	4	5	3	2	8
Helmand	Nahr-e Saraj	1	2	3	4	5	6	7	8
Helmand	Naw Zad	1	2	3	5	4	8	7	6
Qandahar	Dand	1	2	3	5	4	6	7	8
Qandahar	Arghandab	5	2	1	8	4	6	3	7
Qandahar	Panjwai	1	2	3	4	6	7	5	8
Qandahar	Shah Wali Kot	1	3	2	4	5	6	7	8
Zabul	Mizan	2	1	3	8	5	4	6	7
Zabul	Shah Jui	1	2	3	5	4	7	6	8
Zabul	Arghandab	3	2	1	7	5	6	4	8
Uruzgan	Khas Uruzgan	1	4	5	3	2	7	8	6
Uruzgan	Deh Rawod	5	4	3	6	7	2	1	8
Uruzgan	Choreh	2	1	6	3	5	7	8	4
Ghor	Saghar	3	1	2	5	8	7	6	4
Ghor	Taiwara	1	2	3	4	8	7	5	6
Bamyan	Kahmard	1	8	7	6	3	2	4	5
Bamyan	Saighan	1	2	5	4	3	7	8	6
Average		**1**	**2**	**3**	**6**	**7**	**5**	**4**	**8**

Table18: Average yield and comparative gross income of horticultural crops as compared to other crops

Crop	Average yield in the 79 selected districts (Kg/ha)	Average farm gate sale price in the 79 selected districts (Afs/Kg)	Average gross income per ha (Afs)	Average gross income per ha (US $) *	Average gross income in comparison to wheat (base = 100)
FIELD CROPS					
Wheat	2,170	3,052	6,622,840	440	100
Maize	3,360	2,316	7,781,760	517	117
Rice	2,275	5,244	11,930,100	792	180
Cotton	1,645	5,878	9,669,310	642	146
FRUIT CROPS					
Almond	2,415	19,817	47,858,055	3,179	723
Apple	10,325	2,645	27,309,625	1,814	412
Apricot	8,890	2,409	21,416,010	1,423	323
Grape	9,065	2,703	24,502,695	1,628	370
Peach	7,630	2,515	19,189,450	1,275	290
Pomegranate	9,730	2,203	21,435,190	1,424	324
VEGETABLE CROPS					
Cauliflower	29,260	943	27,592,180	1,833	417
Melon	11,690	934	10,918,460	725	165
Okra	7,070	1,649	11,658,430	774	176
Onion	12,845	1,300	16,698,500	1,109	252
Potato	14,175	2,064	29,257,200	1,943	442
Tomato	10,710	1,440	15,422,400	1,024	233
Watermelon	14,350	831	11,924,850	792	180
ILLICIT CROPS					
Opium poppy	70	760,208	53,214,560	3,535	804

* dollar exchange rate at the time of survey approx: equal to 1us$ = 15055 Afs

Table 19: Main locations where farmers are marketing horticultural products for each district

Province	District	% in the village	% in district market	% in provincial market	% abroad
Kabul	Bagrami	3.3	0	95.6	1.1
Kabul	Shakar Dara	44.7	0	50.7	4.7
Kabul	Mir Bacha Kot	52.4	1.8	45.7	0
Kabul	Qarabagh	54.2	45.8	0	0
Kapisa	Tagab	95.8	0	2.1	2.1
Kapisa	Nijrab	48.7	33.5	17.9	0
Parwan	Ghorband	50.7	1.4	48	0
Parwan	Bagram	49.4	42.9	2.6	5.2
Wardak	Nirkh	41.7	22.7	0.9	34.7
Wardak	Chak	60.9	3.8	3	32.3
Wardak	Sayedabad	40.3	4.5	46.8	8.4
Logar	Baraki	22.1	41.1	9.2	27.6
Logar	Khoshi	55.7	12.9	7.1	24.3
Logar	Charkh	19.5	34.7	0	45.8
Logar	Muhammad Agha	0	50	0	50
Ghazni	Jaghuri	21.9	73.7	2.2	2.2
Ghazni	Qarabagh	41.5	17.5	25	16
Paktika	Sharan	53.3	5.6	40.2	0.9
Paktika	Urgun	37.3	55.6	0	7
Paktia	Mandozai	37.2	5.3	57.4	0
Paktia	Nadir Shah Kot	9.7	8.3	69.4	12.5
Paktia	Zurmat	64.8	25.9	2.5	6.8
Nangarhar	Sorkh Rod	26.9	1	71.2	1
Nangarhar	Behsud	18.4	3.5	71.9	6.1
Nangarhar	Hesarak	3.2	74.2	22.6	0
Nangarhar	Khogiani	50.6	11	38.4	0
Nangarhar	Sherzad	8.1	0	43	49
Laghman	Mehtarlam	49.8	2.2	48	0
Laghman	Qaraghayi	0	2.8	97.2	0
Laghman	Alingar	73.2	22.8	4	0
Kunar	Khas Kunar	92.7	0	7.3	0
Kunar	Chawkai	65.8	28.9	0	5.3
Kunar	Nur Gul	100	0	0	0
Badakhshan	Jurm	1	99	0	0
Badakhshan	Baharak	50.5	49.5	0	0
Badakhshan	Keshem	50.2	49.8	0	0
Takhar	Rustaq	0	98.1	0.9	0.9
Takhar	Farkhar	25.5	39.6	34.9	0
Baghlan	Pul-e Khumri	49.6	50.4	0	0
Baghlan	Nahrin	31.9	64.7	3.4	0
Baghlan	Anderab	46.3	50.3	3.4	0
Kunduz	Imam Sahib	37.7	55.8	6.5	0
Kunduz	Char Dara	39.3	27	33.6	0
Samangan	Smanagan	4.9	0	95.1	0
Samangan	Khulm	7	80.3	12.7	0
Balkh	Balkh center	55.8	31.2	13	0
Balkh	Nahr-e Shahi	32.4	2.7	64.9	0
Balkh	Dehdadi	4.9	11.5	83.6	0
Balkh	Sholgara	27.3	48.9	23.9	0
Jawzjan	Sang Charak	50.6	49.4	0	0
Jawzjan	Aqcha	41.2	35.3	21.6	2
Faryab	Pashtun Kot	50.8	3.2	46	0
Faryab	Almar	5.7	82.9	11.4	0
Faryab	Shirin Taqab	41.9	57.4	0	0.7
Badghis	Murghab	0	100	0	0
Badghis	Qadis	0	100	0	0

Table 19: Main locations where farmers are marketing horticultural products for each district

Province	District	% in the village	% in district market	% in provincial market	% abroad
Herat	Enjil	0	0	100	0
Herat	Gozara	1.7	2.6	95.7	0
Herat	Pashtun Zarghun	23.3	19.8	55.2	1.7
Herat	Obeh	47.2	46.5	6.3	0
Farah	Anar Dara	73	27	0	0
Farah	Bala Buluk	52.2	47.8	0	0
Nimroz	Khash Rod	92.9	7.1	0	0
Helmand	Nahr-e Saraj	71.3	28.7	0	0
Helmand	Naw Zad	56.8	24.2	13.7	5.3
Qandahar	Dand	18.1	2.6	40.5	38.8
Qandahar	Arghandab	2.4	2.4	39	56.1
Qandahar	Panjwai	0	3	49.1	47.9
Qandahar	Shah Wali Kot	47.6	4.2	44	4.2
Zabul	Mizan	49.6	13.9	36.5	0
Zabul	Shah Jui	3.5	90.7	5.8	0
Zabul	Arghandab	16.2	33.5	41.9	8.4
Uruzgan	Khas Uruzgan	67.2	22.4	0	10.4
Uruzgan	Deh Rawod	42.9	45.5	5.2	6.5
Uruzgan	Choreh	42.6	50.4	5.2	1.7
Ghor	Saghar	62.5	37.5	0	0
Ghor	Taiwara	89	8.8	2.2	0
Bamyan	Kahmard	94.1	2	3.9	0
Bamyan	Saighan	80.4	6.5	10.9	2.2
Average		39.0	29.7	24.6	6.7

Table20: Handling, packaging and marketing practices

Province	District	% Main packaging method being used for horticultural products			
		Jute bag	Crate	Basket	Other
Kabul	Bagrami	21.4	78.6	0	0
Kabul	Shakar Dara	1.2	98.8	0	0
Kabul	Mir Bacha Kot	3.3	96.7	0	0
Kabul	Qarabagh	3.8	96.2	0	0
Kapisa	Tagab	0	100	0	0
Kapisa	Nijrab	45.3	54.7	0	0
Parwan	Ghorband	60.4	30.6	9	0
Parwan	Bagram	50.4	49.6	0	0
Wardak	Nirkh	25.9	70.7	3.4	0
Wardak	Chak	25.5	67.9	6.1	0.5
Wardak	Sayedabad	5.6	93.7	0.7	0
Logar	Baraki	24.4	70.6	4.2	0.8
Logar	Khoshi	28.4	71.6	0	0
Logar	Charkh	40.6	50.9	8.5	0
Logar	Muhammad Agha	8.6	91.4	0	0
Ghazni	Jaghuri	68.9	0.4	30.7	0
Ghazni	Qarabagh	2.2	1.5	95.6	0.7
Paktika	Sharan	66.7	31	2.3	0
Paktika	Urgun	0	100	0	0
Paktia	Mandozai	21.8	75.6	2.6	0
Paktia	Nadir Shah Kot	50	50	0	0
Paktia	Zurmat	57.7	15.3	27	0
Nangarhar	Sorkh Rod	6.6	87.9	5.5	0
Nangarhar	Behsud	58.8	36	5.1	0
Nangarhar	Hesarak	50	50	0	0
Nangarhar	Khogiani	49.7	50.3	0	0
Nangarhar	Sherzad	49.3	1.4	49.3	0
Laghman	Mehtarlam	50.9	49.1	0	0
Laghman	Qaraghayi	97.3	1.4	1.4	0
Laghman	Alingar	36.4	5.8	57.8	0
Kunar	Khas Kunar	37	63	0	0
Kunar	Chawkai	52.9	17.6	29.4	0
Kunar	Nur Gul	77.8	13.9	8.3	0
Badakhshan	Jurm	48	0	3	49
Badakhshan	Baharak	56.9	0.6	41.9	0.6
Badakhshan	Keshem	52.7	0.8	43.8	2.7
Takhar	Rustaq	2.1	0	0	97.9
Takhar	Farkhar	53.9	6.7	22.5	16.9
Baghlan	Pul-e Khumri	0	43.5	10.1	46.4
Baghlan	Nahrin	13.8	2.5	7.5	76.3
Baghlan	Anderab	26.7	52.3	2.3	18.6
Kunduz	Imam Sahib	82.9	17.1	0	0
Kunduz	Char Dara	84.8	15.2	0	0
Samangan	Smanagan	52.6	47.4	0	0
Samangan	Khulm	52.4	20.2	11.9	15.5
Balkh	Balkh center	1.6	98.4	0	0
Balkh	Nahr-e Shahi	48.3	1.1	0	50.6
Balkh	Dehdadi	0	44.4	0	55.6
Balkh	Sholgara	12.9	61.3	0	25.8
Jawzjan	Sang Charak	49.2	0.6	1.7	48.6
Jawzjan	Aqcha	4.3	4.3	91.3	0
Faryab	Pashtun Kot	35.3	62.7	2	0
Faryab	Almar	43.8	43.8	0	12.5
Faryab	Shirin Taqab	0	1.3	98.7	0
Badghis	Murghab	10.7	30.4	57.1	1.8

Table20: Handling, packaging and marketing practices

Province	District	% Main packaging method being used for horticultural products			
		Jute bag	Crate	Basket	Other
Badghis	Qadis	4	46	6	44
Herat	Enjil	0	1.8	98.2	0
Herat	Gozara	8	0	92	0
Herat	Pashtun Zarghun	6.4	2.6	88.5	2.6
Herat	Obeh	6.3	6.3	87.3	0
Farah	Anar Dara	69.8	0	30.2	0
Farah	Bala Buluk	25.7	51.4	22.9	0
Nimroz	Khash Rod	0	0	100	0
Helmand	Nahr-e Saraj	24.1	1.9	74.1	0
Helmand	Naw Zad	71.3	11.1	17.6	0
Qandahar	Dand	49.6	34.3	15.3	0.7
Qandahar	Arghandab	1.3	69.3	1.3	28
Qandahar	Panjwai	48.8	50	0	1.2
Qandahar	Shah Wali Kot	52	26.9	3.5	17.5
Zabul	Mizan	89.1	7.8	3.1	0
Zabul	Shah Jui	53.7	46.3	0	0
Zabul	Arghandab	68.2	1.6	30.2	0
Uruzgan	Khas Uruzgan	99	1	0	0
Uruzgan	Deh Rawod	86.7	13.3	0	0
Uruzgan	Choreh	97.9	2.1	0	0
Ghor	Saghar	50.7	10.7	38.7	0
Ghor	Taiwara	0	0	100	0
Bamyan	Kahmard	98	2	0	0
Bamyan	Saighan	100	0	0	0
Average		38.3	34.3	19.6	7.8

3. One IP enumerator was assigned to each district. Local guides were also recruited to assist each enumerator in identifying and locating villages, establish contacts with the knowledgeable and readily available community members and organize village level group interviews. These local guides were provided by the district administration in consultation with the Provincial Shura or designated liaison body.

4. A preliminary Test Survey was carried out in 12 districts and was followed by a workshop to review operational issues arising from the implementation of the survey at field level. During this workshop the need for recruiting trustful enumerators was strongly emphasized in order to prevent any risk of collecting forged data. The field survey was then extended to 67 additional districts.

5. Each enumerator had to complete one questionnaire format for each village. Groups composed of 5 to 10 members generally representing about 30 to 100 families (depending upon village size) were interviewed in a group discussion. These groupings of families generally have a formal or popular name that is identifying the village name.

6. For large villages (over 100 families) interviews were organized in sub-groups and several questionnaires could be completed for the same village. However some exceptions were made in the case of villages that were not dividable into separate units because the agricultural land of the village was also not dividable into separate sub-villages, otherwise this would have caused an overlapping between the sub-groups and an overestimation of the total area surveyed.

7. For small villages (less than 30 families), several neighboring villages were combined to meet the group interview criteria to represent from 30 to 100 families. Some exceptions were accepted in situations where a village smaller than 30 families was too distant from another neighboring village to merge into a standard group interview.

8. Each completed questionnaire was checked and verified prior to data entry on computer and data were again cross-checked after data entry to screen possible entry mistakes.

Data Collection Tools

1. The main data collection tools included a questionnaire and an enumerator notebook.

2. The questionnaire was initially prepared in English and translated into Pashtu and Dari language to carry out the field survey. This questionnaire included 61 questions which were grouped in thematic chapters on:

- Demography and socio-economic structure,
- Land use and irrigation structures,

Table21: Ranking of marketing problems of horticultural products in each district

Province	District	Poor road	Product perishability	Limited bargaining power	Limited market information	Lack of cooperative	Influential middleman/ traders	Others
Kabul	Bagrami	1	2	4	6	3	5	
Kabul	Shakar Dara	1	5	6	4	2	3	7
Kabul	Mir Bacha Kot	1	3	6	7	4	2	5
Kabul	Qarabagh	4	1	5	2	3	6	7
Kapisa	Tagab	1	3	4	5	2	6	7
Kapisa	Nijrab	1	3	4	5	2	6	7
Parwan	Ghorband	1	6	3	4	5	2	
Parwan	Bagram	1	6	5	4	3	2	
Wardak	Nirkh	1	4	5	2	3	6	7
Wardak	Chak	1	4	5	2	3	6	7
Wardak	Sayedabad	1	3	4	2	5	6	7
Logar	Baraki	2	5	3	1	4	6	7
Logar	Khoshi	2	5	4	1	3	6	7
Logar	Charkh	2	4	5	1	3	6	7
Logar	Muhammad Agha	1	3	5	4	2	6	7
Ghazni	Jaghuri	1	5	3	4	2	6	7
Ghazni	Qarabagh	2	4	5	1	3	6	7
Paktika	Sharan	1	2	3	5	4	7	6
Paktika	Urgun	5	4	3	1	2	6	7
Paktia	Mandozai	4	5	2	3	1	6	7
Paktia	Nadir Shah Kot	2	3	6	5	1	4	7
Paktia	Zurmat	5	1	6	2	4	7	3
Nangarhar	Sorkh Rod	2	3	4	5	1	6	7
Nangarhar	Behsud	1	2	5	4	3	7	6
Nangarhar	Hesarak	1	2	4	3	5	6	
Nangarhar	Khogiani	2	3	6	5	4	7	1
Nangarhar	Sherzad	1	3	6	2	4	5	7
Laghman	Mehtarlam	5	2	4	1	6	7	3
Laghman	Qaraghayi	3	4	5	2	1	6	7
Laghman	Alingar	1	2	5	3	4	7	6
Kunar	Khas Kunar	1	5	7	4	2	3	6
Kunar	Chawkai	1	5	6	2	3	4	7
Kunar	Nur Gul	1	3	6	5	4	7	2
Badakhshan	Jurm	2	3		4	6	1	5
Badakhshan	Baharak	7	6	5	4	3	2	1
Badakhshan	Keshem	1	3	4	2	5	7	6
Takhar	Rustaq	1	2	5	4	6	7	3
Takhar	Farkhar	1	3	5	4	7	6	2
Baghlan	Pul-e Khumri	7	5	2	6	4	3	1
Baghlan	Nahrin	1	2	4	3	5	7	6
Baghlan	Anderab	1	4	6	2	3	7	5
Kunduz	Imam Sahib	2	1	5	3	4	6	7
Kunduz	Char Dara	3	1	2	4	5	6	7

Table21: Ranking of marketing problems of horticultural products in each district

Province	District	Poor road	Product perishability	Limited bargaining power	Limited market information	Lack of cooperative	Influential middleman/ traders	Others
Samangan	Smanagan	5	4	6	2	1		3
Samangan	Khulm	7	5	6	3	2	4	1
Balkh	Balkh center	1	2	4	5	6	7	3
Balkh	Nahr-e Shahi	3	6	4	2	1	5	
Balkh	Dehdadi	1	6	2	4	3	5	
Balkh	Sholgara	1	3	4	2	7	5	6
Jawzjan	Sang Charak	1	2	5	7	6	4	3
Jawzjan	Aqcha	3	2	1	4	6	5	
Faryab	Pashtun Kot	2	4	6	7	5	3	1
Faryab	Almar	1	4	6	5	7	3	2
Faryab	Shirin Taqab	1	2	6	5	3	7	4
Badghis	Murghab	1	5		4	2	3	6
Badghis	Qadis	1	6		5	4	2	3
Herat	Enjil	6	4	3	2	1	5	7
Herat	Gozara	1	3	5	4	2	6	
Herat	Pashtun Zarghun	2	4	5	1	6	7	3
Herat	Obeh	1	2	6	5	4	3	7
Farah	Anar Dara	1	4		2	3		
Farah	Bala Buluk	1	4		2	3	5	
Nimroz	Khash Rod	1	4	5	2	3	6	7
Helmand	Nahr-e Saraj	1	5	2	3	4	6	7
Helmand	Naw Zad	1	2	3	4	5	6	
Qandahar	Dand	1	2	6	5	4	3	
Qandahar	Arghandab	1	7	5	4	3	6	2
Qandahar	Panjwai	1	3	5	4	2	6	7
Qandahar	Shah Wali Kot	1	6	5	2	3	4	
Zabul	Mizan	4	3	5	6	1	2	7
Zabul	Shah Jui	1	5	6	3	4	2	7
Zabul	Arghandab	1	4	5	6	2	3	7
Uruzgan	Khas Uruzgan	1	2	5	3	4	6	7
Uruzgan	Deh Rawod	1	4	2	3	5	6	7
Uruzgan	Choreh	1	5	4	2	3	6	7
Ghor	Saghar	1	2	7	5	3	4	6
Ghor	Taiwara	1	3	6	2	4		5
Bamyan	Kahmard	1	3		2	4	5	6
Bamyan	Saighan	1	2		3	5	6	4
Average		**1**	**3**	**5**	**2**	**4**	**6**	**7**

Table22.1: Status of Grape cultivation, before and after war

Province	District	Hectares in 1978	Hectares in 1996	% increase / decrease	Average yield (Kg / ha)	Average sale price (Afs / Kg)	Average gross income per ha (US $)	Average gross income in comparison to wheat (base = 100)
Qandahar	Panjwai	9039.6	12150.2	34.4	10255	3334	2271	699
Qandahar	Arghandab	3639.2	4368.2	20.0	9345	3687	2289	305
Qandahar	Dand	4794.2	4310.4	-10.1	11515	3206	2452	754
Jawzjan	Sang Charak	2203.4	2435.6	10.5	4305	1830	523	292
Zabul	Shah Jui	542.0	1989.4	267.0	7630	3135	1589	346
Herat	Gozara	1662.8	1707.0	2.7	13475	3174	2841	384
Parwan	Bagram	1696.8	1662.4	-2.0	11550	1697	1302	123
Faryab	Shirin Taqab	1084.6	1429.8	31.8	4935	3861	1266	516
Balkh	Nahr-e Shahi	1134.4	968.0	-14.7	3850	3205	820	283
Kabul	Shakar Dara	730.6	757.6	3.7	19425	2773	3578	723
Ghazni	Qarabagh	241.2	592.6	145.7	5705	2397	908	379
Herat	Pashtun Zarghun	388.6	527.6	35.8	16590	2368	2609	705
Logar	Muhammad Agha	358.2	501.2	39.9	21700	2857	4118	561
Kabul	Qarabagh	579.2	485.6	-16.2	13720	1523	1388	184
Logar	Charkh	326.0	391.2	20.0	12355	3663	3006	578
Kabul	Mir Bacha Kot	1007.4	342.8	-66.0	14210	2507	2366	577
Faryab	Almar	250.0	342.0	36.8	4585	4926	1500	357
Samangan	Khulm	182.4	282.4	54.8	12110	1254	1009	301
Laghman	Alingar	443.2	275.2	-37.9	5250	2100	732	146
Zabul	Arghandab	210.2	274.8	30.7	4095	3209	873	213
Herat	Enjil	240.2	266.0	10.7	10465	3740	2600	500
Herat	Obeh	249.2	188.4	-24.4	7070	1693	795	230
Paktia	Zurmat	115.4	138.8	20.3	8890	3103	1832	373
Helmand	Nahr-e Saraj	968.2	123.2	-87.3	4410	2176	637	114
Farah	Bala Buluk	94.8	112.8	19.0	6580	2143	937	479
Balkh	Balkh center	99.2	112.2	13.1	5040	3058	1024	218
Laghman	Qaraghayi	100.2	95.6	-4.6	4130	1468	403	107
Samangan	Smanagan	89.6	91.2	1.8	3535	4086	959	356
Helmand	Naw Zad	47.4	84.4	78.1	5635	3051	1142	304
Faryab	Pashtun Kot	105.0	83.2	-20.8	4130	4038	1108	292
Kunar	Chawkai	92.0	81.6	-11.3	8960	2796	1664	392
Paktika	Sharan	63.2	79.8	26.3	12145	2957	2385	582
Kabul	Bagrami	94.6	77.4	-18.2	33390	2663	5906	1663
Bamyan	Kahmard	55.2	73.8	33.7	7035	3318	1550	313
Ghor	Saghar	22.0	57.0	159.1	3675	2891	706	235
Nangarhar	Khogiani	92.8	55.8	-39.9	8645	2599	1492	223
Badghis	Murghab	39.8	53.4	34.2	4865	3039	982	332
Nimroz	Khash Rod	59.0	50.8	-13.9	11585	3714	2858	1144
Nangarhar	Sherzad	52.4	47.8	-8.8	1470	1400	137	18
Laghman	Mehtarlam	64.2	41.0	-36.1	11200	1530	1138	281

Table22.1: Status of Grape cultivation, before and after war

Province	District	Hectares in 1978	Hectares in 1996	% increase / decrease	Average yield (Kg / ha)	Average sale price (Afs / Kg)	Average gross income per ha (US $)	Average gross income in comparison to wheat (base = 100)
Kunar	Khas Kunar	51.8	39.0	-24.7	9205	1503	919	200
Balkh	Sholgara	26.4	38.2	44.7	6440	4980	2130	666
Jawzjan	Aqcha	53.6	35.8	-33.2	4445	2959	874	313
Nangarhar	Hesarak	22.0	32.8	49.1	2870	1446	276	53
Kapisa	Nijrab	32.4	30.0	-7.4	6055	2058	828	169
Balkh	Dehdadi	33.4	28.6	-14.4	8470	2857	1607	284
Takhar	Rustaq	12.4	25.2	103.2	18445	1429	1751	1129
Logar	Baraki	7.0	22.4	220.0	15820	3832	4027	537
Nangarhar	Sorkh Rod	20.6	20.2	-1.9	11235	3720	2776	638
Nangarhar	Behsud	22.0	19.4	-11.8	7770	1257	649	203
Paktika	Urgun	11.2	16.8	50.0	16345	2797	3037	632
Baghlan	Anderab	14.0	15.6	11.4	7420	1508	743	310
Uruzgan	Khas Uruzgan	5.4	15.6	188.9	4585	3889	1184	447
Ghazni	Jaghuri	2.0	15.4	670.0	15400	3052	3122	726
Uruzgan	Choreh	10.4	14.0	34.6	8260	3683	2021	454
Parwan	Ghorband	28.6	13.6	-52.4	14980	2230	2219	444
Paktia	Nadir Shah Kot	10.6	12.0	13.2	23100	3103	4761	865
Kunar	Nur Gul	22.4	11.6	-48.2	6230	2555	1057	260
Baghlan	Nahrin	8.0	11.4	42.5	5215	2286	792	263
Takhar	Farkhar	7.4	9.2	24.3	3990	2531	671	227
Uruzgan	Deh Rawod	22.2	9.2	-58.6	5355	3524	1253	143
Qandahar	Shah Wali Kot	26.6	8.2	-69.2	6825	3500	1587	377
Wardak	Sayedabad	11.4	6.6	-42.1	9100	3743	2262	448
Badghis	Qadis	6.2	6.4	3.2	4445	12857	3796	973
Badakhshan	Keshem	4.6	4.8	4.3	5355	1607	572	475
Baghlan	Pul-e Khumri	21.4	4.8	-77.6	2765	4532	832	281
Ghor	Taiwara	2.4	4.8	100.0	4095	2833	771	205
Kapisa	Tagab	4.8	3.2	-33.3	3710	2049	505	146
Logar	Khoshi	0.0	1.6	160.0	15400	2381	2436	406
Badakhshan	Baharak	2.6	1.2	-53.8	5075	4500	1517	294
Kunduz	Char Dara	0.6	1.2	100.0	5600	3929	1461	429
Paktia	Mandozai	2.4	0.8	-66.7	10920	4049	2937	675
Bamyan	Saighan	0.4	0.6	50.0	7000	4286	1993	319
Wardak	Nirkh	0.4	0.4	0.0	14000	3571	3321	523
Wardak	Chak	0.4	0.4	0.0	10500	3089	2154	392
Badakhshan	Jurm	0.0	0.4	40.0	7000	1524	709	225
Kunduz	Imam Sahib	0.0	0.0	0.0	0	0	0	0
Farah	Anar Dara	0.0	0.0	0.0	0	0	0	0
Zabul	Mizan	0.0	0.0	0.0	0	0	0	0
	Total	33766.4	38189.6	13.1				

Table22.2: Status of Apple cultivation, before and after war

Province	District	Hectares in 1978	Hectares in 1996	% increase / decrease	Average yield (Kg / ha)	Average sale price (Afs / Kg)	Average gross income per ha (US $)	Average gross income in comparison to wheat (base = 100)
Wardak	Nirkh	204.0	966.0	373.5	16415	3369	3673	579
Kabul	Shakar Dara	323.2	590.0	82.5	19005	2760	3484	704
Wardak	Sayedabad	104.4	472.0	352.1	12215	2067	1677	332
Wardak	Chak	70.8	443.2	526.0	12810	1839	1565	285
Ghazni	Jaghuri	19.8	287.8	1353.5	8260	2463	1351	314
Herat	Gozara	198.8	204.2	2.7	9800	2144	1396	189
Balkh	Balkh center	141.8	186.6	31.6	5460	2900	1052	223
Qandahar	Panjwai	1.0	179.0	17800.0	6615	2293	1008	309
Balkh	Nahr-e Shahi	163.0	144.2	-11.5	2940	3062	598	207
Zabul	Shah Jui	26.0	143.0	450.0	10780	3396	2432	528
Logar	Baraki	38.2	136.4	257.1	24115	2139	3426	457
Paktia	Zurmat	80.0	131.8	64.8	12740	2101	1778	363
Herat	Pashtun Zarghun	64.0	121.4	89.7	21595	1989	2853	772
Herat	Enjil	106.8	120.6	12.9	12460	2831	2343	451
Ghor	Saghar	57.4	114.6	99.7	2695	2168	388	130
Ghazni	Qarabagh	8.2	111.0	1253.7	12565	2419	2019	842
Faryab	Shirin Taqab	72.6	109.0	50.1	4375	5186	1507	614
Badakhshan	Baharak	133.6	106.0	-20.7	4865	4470	1444	281
Kapisa	Nijrab	118.0	100.8	-14.6	5110	2501	849	173
Logar	Muhammad Agha	186.8	97.0	-48.1	38465	1974	5044	686
Paktika	Urgun	44.6	97.0	117.5	16660	3976	4400	917
Kabul	Mir Bacha Kot	220.6	89.8	-59.3	11865	1723	1358	332
Kapisa	Tagab	108.6	85.0	-21.7	4305	2014	576	167
Jawzjan	Sang Charak	46.0	71.8	56.1	1820	2274	275	153
Faryab	Almar	58.0	66.6	14.8	4900	7675	2498	595
Logar	Charkh	16.6	63.6	283.1	13335	4875	4318	831
Balkh	Dehdadi	59.0	59.0	0.0	7000	3000	1395	247
Helmand	Naw Zad	26.2	55.4	111.5	5775	2041	783	209
Parwan	Ghorband	107.4	48.4	-54.9	5215	1364	472	94
Paktika	Sharan	8.6	47.4	451.2	12705	5268	4446	1084
Qandahar	Arghandab	37.4	47.4	26.7	10465	3130	2176	290
Paktia	Nadir Shah Kot	62.4	47.2	-24.4	20580	3219	4400	800
Samangan	Smanagan	46.8	45.8	-2.1	15750	929	972	359
Bamyan	Kahmard	34.0	44.4	30.6	6510	3857	1668	337
Badakhshan	Jurm	22.8	44.0	93.0	3430	1418	323	103
Ghor	Taiwara	26.6	44.0	65.4	4865	2000	646	172
Baghlan	Anderab	35.6	42.6	19.7	3710	1923	474	198
Kabul	Bagrami	60.0	35.8	-40.3	11550	1791	1374	387
Logar	Khoshi	41.8	31.0	-25.8	13685	1865	1695	283
Paktia	Mandozai	51.0	28.8	-43.5	14595	3609	3499	805

Table22.2: Status of Apple cultivation, before and after war

Province	District	Hectares in 1978	Hectares in 1996	% increase / decrease	Average yield (Kg / ha)	Average sale price (Afs / Kg)	Average gross income per ha (US $)	Average gross income in comparison to wheat (base = 100)
Kabul	Qarabagh	43.8	26.0	-40.6	3255	5143	1112	147
Takhar	Rustaq	19.6	26.0	32.7	2485	1149	190	123
Bamyan	Saighan	14.0	25.8	84.3	15330	5695	5799	928
Kunar	Khas Kunar	13.2	24.0	81.8	18375	2857	3487	758
Badghis	Murghab	16.0	23.2	45.0	1820	2524	305	103
Takhar	Farkhar	16.0	20.6	28.8	4690	6143	1914	649
Herat	Obeh	17.4	20.4	17.2	16240	1337	1442	419
Baghlan	Nahrin	5.6	19.6	250.0	5180	2470	850	283
Uruzgan	Choreh	16.8	18.6	10.7	4515	3511	1053	237
Faryab	Pashtun Kot	18.2	16.6	-8.8	2905	4603	888	234
Kunduz	Char Dara	13.4	15.8	17.9	2450	3024	492	144
Nangarhar	Hesarak	9.6	12.8	33.3	1890	1894	238	47
Nangarhar	Khogiani	13.8	11.4	-17.4	7105	2384	1125	168
Badakhshan	Keshem	10.8	11.4	5.6	5495	1684	615	513
Uruzgan	Khas Uruzgan	3.2	10.4	225.0	4375	2667	775	292
Parwan	Bagram	12.0	10.2	-15.0	8365	1361	756	71
Kunar	Nur Gul	6.2	8.0	29.0	3500	1829	425	105
Nangarhar	Sherzad	3.0	7.0	133.3	1750	2202	256	35
Baghlan	Pul-e Khumri	28.0	3.6	-87.1	3395	2885	651	220
Zabul	Arghandab	2.4	3.4	41.7	12950	4238	3645	889
Laghman	Mehtarlam	2.8	3.2	14.3	7175	1714	817	201
Balkh	Sholgara	3.0	3.2	6.7	4305	4952	1416	442
Farah	Anar Dara	0.0	2.8	280.0	5250	1429	498	238
Nimroz	Khash Rod	4.8	2.0	-58.3	7000	3571	1660	664
Helmand	Nahr-e Saraj	0.0	1.2	120.0	5250	2143	747	134
Laghman	Qaraghayi	1.0	1.0	0.0	10500	1429	997	262
Zabul	Mizan	20.0	0.4	-98.0	0	0	0	0
Samangan	Khulm	0.2	0.2	0.0	15750	929	972	290
Qandahar	Dand	34.2	0.2	-99.4	2730	1943	352	108
Badghis	Qadis	0.0	0.0	0.0	0	0	0	0
Farah	Bala Buluk	0.0	0.0	0.0	0	0	0	0
Jawzjan	Aqcha	0.0	0.0	0.0	0	0	0	0
Nangarhar	Sorkh Rod	0.0	0.0	0.0	0	0	0	0
Nangarhar	Behsud	0.0	0.0	0.0	0	0	0	0
Laghman	Alingar	0.0	0.0	0.0	0	0	0	0
Kunar	Chawkai	0.0	0.0	0.0	0	0	0	0
Kunduz	Imam Sahib	0.0	0.0	0.0	0	0	0	0
Qandahar	Shah Wali Kot	0.0	0.0	0.0	0	0	0	0
Uruzgan	Deh Rawod	0.0	0.0	0.0	0	0	0	0
Total		3581.4	6188.6	72.8				

Table22.3: Status of Apricot cultivation, before and after war

Province	District	Hectares in 1978	Hectares in 1996	% increase / decrease	Average yield (Kg / ha)	Average sale price (Afs / Kg)	Average gross income per ha (US $)	Average gross income in comparison to wheat (base = 100)
Zabul	Shah Jui	328.0	1307.4	298.6	9695	3221	2074	451
Uruzgan	Choreh	714.8	934.0	30.7	2100	3215	448	101
Zabul	Arghandab	458.8	705.0	53.7	3850	3232	827	201
Ghazni	Jaghuri	187.2	654.4	249.6	15925	755	799	186
Helmand	Nahr-e Saraj	1617.6	559.6	-65.4	4375	2304	670	121
Uruzgan	Khas Uruzgan	230.2	542.8	135.8	6545	3892	1692	638
Bamyan	Kahmard	414.4	446.8	7.8	7175	3034	1446	292
Wardak	Nirkh	81.8	292.8	257.9	11200	4107	3055	481
Herat	Pashtun Zarghun	186.4	266.6	43.0	25970	1759	3034	820
Balkh	Balkh center	223.0	264.0	18.4	5775	2984	1145	244
Ghor	Saghar	166.0	250.6	51.0	3675	1936	473	158
Qandahar	Arghandab	162.8	240.6	47.8	14525	2387	2303	307
Wardak	Chak	90.8	234.2	157.9	7910	1783	937	170
Herat	Obeh	354.0	218.6	-38.2	16485	583	638	186
Badakhshan	Jurm	60.8	197.4	224.7	2765	1248	229	73
Qandahar	Panjwai	5.4	196.8	3544.4	13615	2974	2690	828
Wardak	Sayedabad	90.2	163.6	81.4	12880	2045	1750	347
Bamyan	Saighan	111.6	160.0	43.4	18515	3446	4238	678
Balkh	Nahr-e Shahi	202.6	156.2	-22.9	3500	2957	687	236
Ghor	Taiwara	107.2	151.0	40.9	4060	1875	506	135
Badghis	Qadis	133.6	149.4	11.8	4620	2412	740	190
Balkh	Dehdadi	136.8	143.2	4.7	9135	3008	1825	323
Parwan	Ghorband	279.4	123.2	-55.9	1680	5766	643	129
Ghazni	Qarabagh	68.6	106.2	54.8	16240	1461	1576	656
Helmand	Naw Zad	56.4	102.4	81.6	5250	3256	1135	303
Herat	Enjil	88.2	97.6	10.7	9590	2432	1549	298
Badakhshan	Baharak	123.8	93.0	-24.9	3955	3112	818	158
Kapisa	Nijrab	112.4	79.6	-29.2	5075	2599	876	179
Logar	Charkh	58.4	77.0	31.8	8995	3843	2296	441
Paktia	Zurmat	29.8	75.2	152.3	18025	1874	2244	458
Herat	Gozara	70.4	64.0	-9.1	8855	1914	1126	152
Logar	Khoshi	63.4	60.8	-4.1	8820	1994	1168	195
Faryab	Almar	51.4	60.2	17.1	4830	3804	1220	290
Paktika	Urgun	42.6	58.6	37.6	18830	2595	3246	676
Nangarhar	Sorkh Rod	63.2	52.0	-17.7	12950	3073	2643	608
Samangan	Smanagan	52.4	48.0	-8.4	3640	2612	632	233
Balkh	Sholgara	40.2	47.8	18.9	5355	2412	858	269
Laghman	Alingar	82.0	46.4	-43.4	4900	1934	629	126
Paktia	Nadir Shah Kot	42.6	40.8	-4.2	19985	2855	3790	689
Badakhshan	Keshem	34.4	39.4	14.5	4690	971	302	254

Table22.3: Status of Apricot cultivation, before and after war

Province	District	Hectares in 1978	Hectares in 1996	% increase / decrease	Average yield (Kg / ha)	Average sale price (Afs / Kg)	Average gross income per ha (US $)	Average gross income in comparison to wheat (base = 100)
Kabul	Shakar Dara	35.2	35.0	-0.6	12565	2220	1853	375
Jawzjan	Sang Charak	26.0	34.2	31.5	0	3	0	0
Baghlan	Anderab	29.8	33.6	12.8	4025	1242	332	138
Zabul	Mizan	25.6	33.6	31.3	8750	5714	3321	781
Faryab	Pashtun Kot	32.2	32.4	0.6	2800	2829	526	138
Nangarhar	Hesarak	22.4	31.8	42.0	2380	1927	305	59
Samangan	Khulm	27.6	30.2	9.4	3640	6469	1564	467
Nangarhar	Khogiani	50.8	28.8	-43.3	6300	2405	1006	150
Jawzjan	Aqcha	28.2	27.2	-3.5	5355	2762	982	350
Logar	Muhammad Agha	58.0	25.2	-56.6	10710	4265	3034	413
Baghlan	Nahrin	20.0	25.2	26.0	7455	1165	577	192
Paktia	Mandozai	49.0	25.0	-49.0	13405	2734	2434	560
Faryab	Shirin Taqab	17.6	24.2	37.5	10185	2714	1836	749
Logar	Baraki	9.0	22.4	148.9	23450	1811	2821	376
Nangarhar	Sherzad	22.8	21.6	-5.3	1155	2114	162	22
Laghman	Mehtarlam	33.0	19.8	-40.0	12880	911	779	193
Kunar	Khas Kunar	25.0	18.0	-28.0	10325	1777	1219	265
Takhar	Rustaq	13.4	17.2	28.4	2380	2378	376	242
Kabul	Bagrami	29.8	16.6	-44.3	8155	1470	796	224
Takhar	Farkhar	18.4	16.6	-9.8	4480	2556	761	258
Qandahar	Dand	102.6	16.2	-84.2	1330	1600	141	43
Kapisa	Tagab	15.0	14.6	-2.7	3745	2274	566	164
Badghis	Murghab	10.6	13.6	28.3	1680	3206	358	122
Baghlan	Pul-e Khumri	54.8	11.2	-79.6	2625	2525	440	149
Kunduz	Imam Sahib	4.4	10.8	145.5	2450	2019	329	93
Uruzgan	Deh Rawod	9.6	10.8	12.5	6230	2357	975	111
Farah	Anar Dara	9.6	9.6	0.0	5705	1571	595	283
Qandahar	Shah Wali Kot	16.8	9.4	-44.0	8575	4134	2355	561
Kabul	Mir Bacha Kot	26.2	9.2	-64.9	7070	1460	686	167
Paktika	Sharan	4.8	7.8	62.5	9695	1952	1257	306
Kunar	Chawkai	8.0	6.4	-20.0	12845	4362	3722	875
Kunar	Nur Gul	8.4	5.0	-40.5	6300	3429	1435	354
Parwan	Bagram	10.0	4.0	-60.0	3780	4619	1160	109
Nangarhar	Behsud	3.2	3.4	6.2	14875	1893	1870	584
Laghman	Qaraghayi	7.6	2.8	-63.2	1715	1378	157	41
Farah	Bala Buluk	0.8	1.2	50.0	5250	1143	399	205
Kunduz	Char Dara	1.4	1.0	-28.6	2275	2857	432	126
Nimroz	Khash Rod	0.6	0.8	33.3	12250	2429	1976	790
Kabul	Qarabagh	0.0	0.0	0.0	0	0	0	0
Total		8291.8	10163.6	22.6				

Table22.4: Status of Almond cultivation, before and after war

Province	District	Hectares in 1978	Hectares in 1996	% increase / decrease	Average yield (Kg / ha)	Average sale price (Afs / Kg)	Average gross income per ha (US $)	Average gross income in comparison to wheat (base = 100)
Zabul	Arghandab	2026.4	2898.6	43.0	2940	7434	1452	354
Zabul	Mizan	996.2	2611.6	162.2	3360	8158	1821	428
Kunduz	Char Dara	879.6	1302.8	48.1	630	63051	2638	776
Uruzgan	Choreh	1031.4	1301.4	26.2	2345	8292	1292	290
Zabul	Shah Jui	354.0	1168.8	230.2	4690	6024	1877	408
Ghazni	Jaghuri	84.6	872.8	931.7	1750	9226	1072	249
Qandahar	Shah Wali Kot	846.2	795.6	-6.0	5005	9059	3012	717
Uruzgan	Deh Rawod	171.6	768.4	347.8	3570	8051	1909	218
Uruzgan	Khas Uruzgan	297.4	654.8	120.2	6195	8407	3459	1306
Samangan	Smanagan	580.4	618.4	6.5	840	49714	2774	1028
Parwan	Ghorband	704.2	378.0	-46.3	1295	13318	1146	229
Balkh	Balkh center	157.2	327.0	108.0	1015	50476	3403	724
Samangan	Khulm	255.8	274.4	7.3	525	27984	976	291
Helmand	Naw Zad	142.6	255.6	79.2	3955	11059	2905	775
Kunduz	Imam Sahib	87.8	253.8	189.1	630	61412	2570	724
Logar	Muhammad Agha	149.0	148.8	-0.1	1785	17013	2017	274
Balkh	Nahr-e Shahi	221.2	136.4	-38.3	700	32056	1490	514
Jawzjan	Sang Charak	78.0	122.8	57.4	875	10292	598	333
Bamyan	Kahmard	90.4	116.4	28.8	2380	23286	3681	743
Logar	Khoshi	5.0	70.4	1308.0	1645	28770	3144	524
Ghazni	Qarabagh	45.6	58.8	28.9	2170	9435	1360	567
Faryab	Shirin Taqab	35.0	54.8	56.6	210	39211	547	222
Balkh	Dehdadi	68.8	51.8	-24.7	1085	70848	5106	904
Balkh	Sholgara	39.4	48.6	23.4	560	63910	2377	742
Kapisa	Nijrab	47.4	44.0	-7.2	1330	6643	587	119
Herat	Gozara	36.4	22.4	-38.5	5005	9845	3273	443
Bamyan	Saighan	9.2	17.4	89.1	2030	19592	2642	422
Wardak	Sayedabad	4.6	15.8	243.5	6020	7995	3197	633
Paktia	Zurmat	9.8	14.0	42.9	3465	10437	2402	490
Kunar	Nur Gul	10.0	14.0	40.0	3500	11429	2657	656
Qandahar	Arghandab	6.8	10.8	58.8	3185	6296	1332	177
Ghor	Saghar	3.0	7.4	146.7	1155	7651	587	195
Wardak	Nirkh	2.2	7.2	227.3	630	12057	505	80
Parwan	Bagram	18.0	7.0	-61.1	1505	14286	1428	135
Baghlan	Anderab	1.4	5.0	257.1	630	67286	2816	1173
Qandahar	Dand	4.0	5.0	25.0	5250	9143	3188	982
Faryab	Pashtun Kot	3.0	4.2	40.0	280	44000	818	216
Logar	Charkh	2.8	3.6	28.6	2205	9429	1381	265
Helmand	Nahr-e Saraj	7.6	3.0	-60.5	3255	3619	782	141
Takhar	Farkhar	1.0	2.4	140.0	1400	22667	2108	715

Table22.4: Status of Almond cultivation, before and after war

Province	District	Hectares in 1978	Hectares in 1996	% increase / decrease	Average yield (Kg / ha)	Average sale price (Afs / Kg)	Average gross income per ha (US $)	Average gross income in comparison to wheat (base = 100)
Takhar	Rustaq	20.4	2.2	-89.2	2030	4571	616	397
Wardak	Chak	0.6	2.0	233.3	4830	10107	3243	590
Faryab	Almar	0.8	2.0	150.0	350	44286	1030	245
Ghor	Taiwara	1.6	2.0	25.0	3115	3029	627	167
Paktia	Nadir Shah Kot	2.6	1.8	-30.8	4200	7143	1993	363
Paktika	Sharan	0.6	1.2	100.0	0	0	0	0
Herat	Obeh	3.4	1.2	-64.7	5495	9829	3588	1039
Kabul	Bagrami	0.2	1.0	400.0	1785	8186	971	273
Logar	Baraki	0.2	1.0	400.0	9975	12548	8314	1109
Qandahar	Panjwai	0.0	0.8	80.0	3290	6571	1436	442
Nangarhar	Khogiani	1.0	0.6	-40.0	0	0	0	0
Laghman	Mehtarlam	1.0	0.6	-40.0	1050	2286	159	40
Badakhshan	Keshem	0.6	0.6	0.0	0	0	0	0
Baghlan	Pul-e Khumri	2.6	0.6	-76.9	2800	17143	3188	1081
Paktika	Urgun	0.0	0.4	40.0	2625	7000	1221	254
Badakhshan	Jurm	0.2	0.4	100.0	2625	29286	5106	1621
Badakhshan	Baharak	0.4	0.4	0.0	6650	5667	2503	486
Kabul	Shakar Dara	0.2	0.2	0.0	4200	11429	3188	644
Kapisa	Tagab	0.0	0.2	20.0	805	4714	252	72
Kabul	Mir Bacha Kot	0.0	0.0	0.0	0	0	0	0
Kabul	Qarabagh	0.0	0.0	0.0	0	0	0	0
Paktia	Mandozai	0.0	0.0	0.0	0	0	0	0
Nangarhar	Sorkh Rod	0.0	0.0	0.0	0	0	0	0
Nangarhar	Behsud	0.0	0.0	0.0	0	0	0	0
Nangarhar	Hesarak	0.0	0.0	0.0	0	0	0	0
Nangarhar	Sherzad	0.0	0.0	0.0	0	0	0	0
Laghman	Qaraghayi	0.0	0.0	0.0	0	0	0	0
Laghman	Alingar	0.0	0.0	0.0	0	0	0	0
Kunar	Khas Kunar	0.0	0.0	0.0	0	0	0	0
Kunar	Chawkai	0.0	0.0	0.0	0	0	0	0
Baghlan	Nahrin	0.0	0.0	0.0	0	0	0	0
Jawzjan	Aqcha	0.0	0.0	0.0	0	0	0	0
Badghis	Murghab	0.0	0.0	0.0	0	0	0	0
Badghis	Qadis	0.0	0.0	0.0	0	0	0	0
Herat	Enjil	0.0	0.0	0.0	0	0	0	0
Herat	Pashtun Zarghun	0.0	0.0	0.0	0	0	0	0
Farah	Anar Dara	0.0	0.0	0.0	0	0	0	0
Farah	Bala Buluk	0.0	0.0	0.0	0	0	0	0
Nimroz	Khash Rod	0.0	0.0	0.0	0	0	0	0
Total		9551.4	15493.2	62.2				

- Status of horticultural crops in comparison to their status at the beginning of the war,
- Economical aspects in comparison to other agricultural crops and
- Other issues related to horticultural crops production and marketing.

3. Enumerator notebooks were used for obtaining additional information that was not covered in the questionnaire, but could be useful for data interpretation.

Methodology Limitations and Possible Causes of Errors

1. Although all possible precautions were taken it must be recognized that data collection and computerization are inevitably subject to some minor errors because:

- Most of the cultivated land could not be physically measured and all figures quoted by farmers must be considered as estimates only;

- Data from the past refer to farmers' memory but must be accepted as the most reliable information since no genuine primary field data was ever collected in the past.

- Group interview is a useful method for conducting large-scale survey but that approach may impair all members of the group from having an equal opportunity to express their views while some individuals also could have their views influenced by the group.

- More than 7000 questionnaires with 61 questions each were collected. Therefore mistaken computer data entries might have occurred in spite of several cross checks.

2. In spite of these possible causes of errors it can be considered that average figures are in any case highly representative since these were collected from more than 7000 villages.

Table22.5: Status of Peach cultivation, before and after war

Province	District	Hectares in 1978	Hectares in 1996	% increase / decrease	Average yield (Kg / ha)	Average sale price (Afs / Kg)	Average gross income per jerib (US $)	Average gross income in comparison to wheat (base = 100)
Kabul	Shakar Dara	60.0	257.4	329.0	14980	3459	3442	695
Qandahar	Arghandab	135.4	216.0	59.5	11200	2200	1637	218
Takhar	Rustaq	54.2	84.2	55.4	3255	595	129	84
Badghis	Qadis	77.4	81.8	5.7	5705	1895	718	185
Balkh	Dehdadi	60.4	68.0	12.6	9660	2527	1621	287
Baghlan	Nahrin	40.6	56.8	39.9	9940	780	515	172
Jawzjan	Sang Charak	31.8	49.6	56.0	5425	1189	428	239
Kabul	Mir Bacha Kot	124.4	47.0	-62.2	8295	1702	938	229
Herat	Gozara	48.6	46.0	-5.3	8295	2226	1226	166
Balkh	Sholgara	28.6	37.6	31.5	10990	2494	1821	569
Wardak	Nirkh	0.8	30.4	3700.0	6650	10891	4811	757
Badakhshan	Jurm	12.4	27.4	121.0	3570	1314	312	98
Bamyan	Kahmard	22.0	27.4	24.5	4655	4078	1261	255
Faryab	Shirin Taqab	22.6	25.4	12.4	6055	3486	1402	571
Qandahar	Panjwai	0.0	25.2	2520.0	9905	1571	1034	318
Badghis	Murghab	17.6	24.8	40.9	3045	3346	677	229
Balkh	Balkh center	21.6	23.6	9.3	4935	3000	983	210
Kapisa	Nijrab	11.2	22.6	101.8	5985	2270	902	184
Ghor	Saghar	9.0	21.4	137.8	2905	2496	482	160
Nangarhar	Sorkh Rod	20.4	18.0	-11.8	11025	2527	1851	425
Baghlan	Anderab	16.0	16.8	5.0	3605	1370	328	138
Jawzjan	Aqcha	15.8	16.6	5.1	4130	2543	698	250
Herat	Pashtun Zarghun	11.4	15.8	38.6	22855	2464	3741	1011
Kunar	Chawkai	7.4	15.4	108.1	6755	2043	917	215
Nangarhar	Khogiani	25.0	14.6	-41.6	5075	2615	882	131
Paktika	Urgun	7.0	14.4	105.7	9240	3379	2074	432
Laghman	Alingar	24.0	14.2	-40.8	4235	2365	665	133
Kunar	Khas Kunar	1.8	13.6	655.6	15750	3357	3512	763
Balkh	Nahr-e Shahi	14.4	12.2	-15.3	4760	2657	840	290
Takhar	Farkhar	13.0	12.0	-7.7	5005	1837	611	207
Herat	Enjil	6.6	10.4	57.6	7280	2066	999	192
Paktia	Nadir Shah Kot	12.2	10.2	-16.4	14980	2798	2784	506
Helmand	Naw Zad	5.6	9.6	71.4	5950	2008	794	212
Kabul	Bagrami	6.6	9.2	39.4	6930	1401	645	182
Faryab	Pashtun Kot	11.8	8.8	-25.4	3290	3036	663	175
Logar	Baraki	1.6	7.6	375.0	20825	2348	3248	433
Paktia	Mandozai	21.0	7.2	-65.7	8855	2867	1686	387
Faryab	Almar	4.8	5.8	20.8	4340	3612	1041	248
Ghazni	Jaghuri	1.6	5.4	237.5	5355	1831	651	151
Uruzgan	Khas Uruzgan	2.0	5.0	150.0	12740	2857	2418	913

Table22.5: Status of Peach cultivation, before and after war

Province	District	Hectares in 1978	Hectares in 1996	% increase / decrease	Average yield (Kg / ha)	Average sale price (Afs / Kg)	Average gross income per jerib (US $)	Average gross income in comparison to wheat (base = 100)
Wardak	Sayedabad	1.0	4.8	380.0	10360	2091	1439	285
Baghlan	Pul-e Khumri	10.8	3.6	-66.7	3325	2625	580	197
Ghor	Taiwara	1.4	3.4	142.9	5355	2036	724	193
Herat	Obeh	6.8	2.8	-58.8	6300	1946	814	236
Badakhshan	Keshem	1.6	2.2	37.5	5740	1614	615	513
Nangarhar	Behsud	2.0	2.0	0.0	14000	2143	1993	623
Laghman	Mehtarlam	3.2	2.0	-37.5	14000	810	753	186
Paktia	Zurmat	0.2	1.8	800.0	9800	3571	2325	474
Nangarhar	Hesarak	1.2	1.6	33.3	2030	2095	282	55
Ghazni	Qarabagh	0.6	1.0	66.7	5845	2238	869	363
Badakhshan	Baharak	0.6	1.0	66.7	6650	1929	852	165
Logar	Muhammad Agha	5.0	0.8	-84.0	12250	2143	1744	237
Laghman	Qaraghayi	0.8	0.8	0.0	1050	1429	100	26
Uruzgan	Choreh	0.4	0.8	100.0	4585	4571	1392	312
Paktika	Sharan	0.4	0.6	50.0	8750	2571	1494	365
Samangan	Khulm	0.6	0.6	0.0	0	0	0	0
Nangarhar	Sherzad	0.0	0.4	40.0	875	2286	133	18
Bamyan	Saighan	0.2	0.4	100.0	12250	5000	4068	651
Wardak	Chak	0.0	0.2	20.0	6300	2095	877	159
Logar	Khoshi	0.2	0.2	0.0	21000	1571	2191	365
Zabul	Arghandab	0.2	0.2	0.0	21000	1429	1993	487
Samangan	Smanagan	0.0	0.0	0.0	0	0	0	0
Kabul	Qarabagh	0.0	0.0	0.0	0	0	0	0
Kapisa	Tagab	0.0	0.0	0.0	0	0	0	0
Parwan	Ghorband	0.0	0.0	0.0	0	0	0	0
Parwan	Bagram	0.0	0.0	0.0	0	0	0	0
Logar	Charkh	0.0	0.0	0.0	0	0	0	0
Kunar	Nur Gul	0.0	0.0	0.0	0	0	0	0
Kunduz	Imam Sahib	0.0	0.0	0.0	0	0	0	0
Kunduz	Char Dara	0.0	0.0	0.0	0	0	0	0
Farah	Anar Dara	0.0	0.0	0.0	0	0	0	0
Farah	Bala Buluk	0.0	0.0	0.0	0	0	0	0
Nimroz	Khash Rod	0.0	0.0	0.0	0	0	0	0
Helmand	Nahr-e Saraj	0.0	0.0	0.0	0	0	0	0
Qandahar	Dand	0.0	0.0	0.0	0	0	0	0
Qandahar	Shah Wali Kot	0.0	0.0	0.0	0	0	0	0
Zabul	Mizan	0.0	0.0	0.0	0	0	0	0
Zabul	Shah Jui	0.0	0.0	0.0	0	0	0	0
Uruzgan	Deh Rawod	0.0	0.0	0.0	0	0	0	0
Total		1045.8	1446.6	38.3				

Table22.6: Status of Pomegranate cultivation, before and after war

Province	District	Hectares in 1978	Hectares in 1996	% increase / decrease	Average yield (Kg / ha)	Average sale price (Afs / Kg)	Average gross income per ha (US $)	Average gross income in comparison to wheat (base = 100)
Qandahar	Arghandab	1359.8	1798.0	32.2	19180	6238	7947	1060
Kapisa	Tagab	974.8	678.0	-30.4	2835	2595	489	142
Qandahar	Shah Wali Kot	355.8	535.4	50.5	10185	1912	1294	308
Qandahar	Panjwai	252.0	487.4	93.4	8890	2333	1378	423
Herat	Gozara	311.6	329.0	5.6	12670	1958	1648	223
Samangan	Khulm	271.4	300.6	10.8	4095	2086	567	169
Qandahar	Dand	229.6	180.8	-21.3	8610	1385	792	243
Helmand	Naw Zad	89.4	157.4	76.1	6545	1722	749	200
Herat	Pashtun Zarghun	94.2	151.2	60.5	17885	2103	2498	676
Farah	Anar Dara	119.6	119.8	0.2	6020	984	393	188
Laghman	Alingar	163.6	105.2	-35.7	5810	1601	618	124
Balkh	Balkh center	85.8	101.2	17.9	7910	2387	1254	267
Zabul	Mizan	15.2	71.2	368.4	18865	1194	1496	352
Paktia	Nadir Shah Kot	74.8	65.2	-12.8	22330	2803	4157	755
Helmand	Nahr-e Saraj	412.0	58.8	-85.7	5600	2005	746	134
Nangarhar	Khogiani	96.8	53.8	-44.4	19775	2458	3229	482
Herat	Obeh	77.8	48.8	-37.3	21035	1734	2423	703
Balkh	Dehdadi	46.0	48.4	5.2	8365	2762	1535	272
Herat	Enjil	40.8	47.8	17.2	14770	2795	2742	527
Jawzjan	Aqcha	60.2	44.0	-26.9	12285	2143	1749	625
Kapisa	Nijrab	52.2	40.2	-23.0	3220	3163	677	138
Nangarhar	Sherzad	52.8	35.4	-33.0	2345	2684	418	58
Nangarhar	Hesarak	27.4	31.2	13.9	2835	2507	472	91
Farah	Bala Buluk	23.8	28.8	21.0	7000	1487	691	354
Kabul	Bagrami	66.2	22.2	-66.5	10430	1929	1336	376
Uruzgan	Deh Rawod	22.8	20.4	-10.5	11865	2432	1917	219
Uruzgan	Choreh	9.4	12.2	29.8	7560	2416	1213	273
Kunar	Nur Gul	7.0	12.0	71.4	7000	1029	478	119
Faryab	Shirin Taqab	6.6	10.2	54.5	5950	2696	1066	435
Nangarhar	Sorkh Rod	5.8	9.8	69.0	13545	3143	2828	651
Zabul	Arghandab	7.4	9.2	24.3	5495	1905	695	170
Ghor	Saghar	3.0	9.0	200.0	3150	0	0	0
Nimroz	Khash Rod	13.2	8.8	-33.3	9765	1980	1284	514
Paktia	Mandozai	11.4	7.0	-38.6	9310	3075	1902	437
Wardak	Chak	0.8	4.8	500.0	0	0	0	0
Nangarhar	Behsud	8.0	4.4	-45.0	15365	1315	1342	420
Balkh	Nahr-e Shahi	3.6	3.6	0.0	3850	2514	643	222
Kunduz	Imam Sahib	0.0	2.2	220.0	3570	2314	549	155
Samangan	Smanagan	3.0	2.2	-26.7	4060	2079	561	208
Takhar	Farkhar	1.4	2.0	42.9	8015	1471	783	266

Table22.6: Status of Pomegranate cultivation, before and after war

Province	District	Hectares in 1978	Hectares in 1996	% increase / decrease	Average yield (Kg / ha)	Average sale price (Afs / Kg)	Average gross income per ha (US $)	Average gross income in comparison to wheat (base = 100)
Paktika	Urgun	1.4	1.8	28.6	3150	2857	598	125
Takhar	Rustaq	0.6	1.8	200.0	1400	2000	186	119
Baghlan	Nahrin	1.0	1.6	60.0	11095	1643	1211	403
Laghman	Qaraghayi	3.6	1.4	-61.1	3220	1429	306	80
Laghman	Mehtarlam	1.6	1.2	-25.0	14595	1100	1066	263
Jawzjan	Sang Charak	1.2	1.2	0.0	2800	914	170	94
Badakhshan	Jurm	0.6	0.6	0.0	4130	1657	455	144
Kunar	Chawkai	0.2	0.4	100.0	10675	3571	2532	595
Badakhshan	Keshem	0.2	0.2	0.0	8400	1143	638	533
Kabul	Shakar Dara	0.0	0.0	0.0	0	0	0	0
Kabul	Mir Bacha Kot	0.0	0.0	0.0	0	0	0	0
Kabul	Qarabagh	0.0	0.0	0.0	0	0	0	0
Parwan	Ghorband	0.0	0.0	0.0	0	0	0	0
Parwan	Bagram	0.0	0.0	0.0	0	0	0	0
Wardak	Nirkh	0.0	0.0	0.0	0	0	0	0
Wardak	Sayedabad	0.0	0.0	0.0	0	0	0	0
Logar	Baraki	0.0	0.0	0.0	0	0	0	0
Logar	Khoshi	0.0	0.0	0.0	0	0	0	0
Logar	Charkh	0.0	0.0	0.0	0	0	0	0
Logar	Muhammad Agha	0.0	0.0	0.0	0	0	0	0
Ghazni	Jaghuri	0.0	0.0	0.0	0	0	0	0
Ghazni	Qarabagh	0.0	0.0	0.0	0	0	0	0
Paktika	Sharan	0.0	0.0	0.0	0	0	0	0
Paktia	Zurmat	0.0	0.0	0.0	0	0	0	0
Kunar	Khas Kunar	2.0	0.0	-100.0	0	0	0	0
Badakhshan	Baharak	0.0	0.0	0.0	0	0	0	0
Baghlan	Pul-e Khumri	0.0	0.0	0.0	0	0	0	0
Baghlan	Anderab	0.0	0.0	0.0	0	0	0	0
Kunduz	Char Dara	0.0	0.0	0.0	0	0	0	0
Balkh	Sholgara	0.0	0.0	0.0	0	0	0	0
Faryab	Pashtun Kot	0.0	0.0	0.0	0	0	0	0
Faryab	Almar	0.0	0.0	0.0	0	0	0	0
Badghis	Murghab	0.0	0.0	0.0	0	0	0	0
Badghis	Qadis	0.0	0.0	0.0	0	0	0	0
Zabul	Shah Jui	0.0	0.0	0.0	0	0	0	0
Uruzgan	Khas Uruzgan	0.0	0.0	0.0	0	0	0	0
Ghor	Taiwara	0.0	0.0	0.0	0	0	0	0
Bamyan	Kahmard	0.0	0.0	0.0	0	0	0	0
Bamyan	Saighan	0.0	0.0	0.0	0	0	0	0
Total		5469.4	5667.8	3.6				

Table23.1: Status of Potato cultivation, before and after war.

Province	District	Hectares in 1978	Hectares in 1996	% increase / decrease	Average yield (Kg / ha)	Average sale price (Afs / Kg)	Average gross income per ha (US $)	Average gross income in comparison to wheat (base = 100)
Wardak	Sayedabad	282.2	1080.4	282.8	20615	2131	2918	578
Wardak	Nirkh	260.0	675.8	159.9	20090	2373	3167	498
Logar	Muhammad Agha	183.6	392.6	113.8	29890	2161	4290	584
Ghazni	Qarabagh	220.6	390.8	77.2	8995	2191	1309	546
Jawzjan	Sang Charak	295.8	385.4	30.3	7175	1317	628	347
Ghazni	Jaghuri	151.8	383.0	152.3	10745	1982	1415	329
Kabul	Shakar Dara	153.0	352.4	130.3	14245	1667	1577	319
Qandahar	Arghandab	197.4	347.2	75.9	13790	2378	2178	291
Takhar	Rustaq	176.4	346.4	96.4	5740	1402	535	345
Bamyan	Saighan	211.4	308.8	46.1	13090	1548	1346	215
Paktika	Urgun	156.4	308.2	97.1	14700	2322	2267	472
Herat	Pashtun Zarghun	129.4	287.2	121.9	18725	2012	2502	676
Wardak	Chak	101.6	278.4	174.0	14455	2208	2120	385
Logar	Baraki	60.6	268.0	342.2	31465	2011	4203	561
Laghman	Mehtarlam	171.8	254.4	48.1	24535	1755	2860	706
Bamyan	Kahmard	176.0	214.4	21.8	13335	2747	2433	492
Zabul	Shah Jui	106.6	172.8	62.1	9695	2474	1593	347
Ghor	Taiwara	41.8	172.0	311.5	4025	1774	474	127
Zabul	Arghandab	95.6	167.2	74.9	6125	2653	1079	263
Uruzgan	Khas Uruzgan	72.6	149.2	105.5	2380	2017	319	121
Herat	Gozara	129.4	136.4	5.4	22960	2527	3854	521
Herat	Obeh	75.0	134.2	78.9	10255	2367	1612	468
Badghis	Qadis	122.0	124.6	2.1	14945	1450	1439	369
Paktia	Zurmat	85.6	124.0	44.9	7385	2541	1246	254
Kabul	Bagrami	250.2	106.8	-57.3	20895	1890	2623	739
Laghman	Alingar	74.4	104.4	40.3	10850	2458	1771	354
Kabul	Mir Bacha Kot	227.8	97.8	-57.1	17465	1687	1957	477
Takhar	Farkhar	13.6	92.4	579.4	9380	1456	907	307
Badakhshan	Keshem	65.8	92.2	40.1	11445	1134	862	717
Badakhshan	Jurm	32.6	91.8	181.6	5635	1910	715	227
Baghlan	Nahrin	69.0	88.4	28.1	7420	1849	911	303
Logar	Khoshi	8.2	83.8	922.0	14525	2777	2679	447
Ghor	Saghar	4.6	79.0	1617.4	3710	1774	437	145
Badakhshan	Baharak	142.4	78.8	-44.7	14315	1200	1141	221
Laghman	Qaraghayi	36.6	71.2	94.5	15995	1817	1930	508
Kapisa	Nijrab	46.4	68.8	48.3	16520	1924	2111	431
Baghlan	Pul-e Khumri	82.2	64.6	-21.4	13125	2030	1770	600
Nangarhar	Behsud	38.8	55.6	43.3	12355	1993	1636	511
Herat	Enjil	39.2	55.4	41.3	19250	2964	3790	729
Kabul	Qarabagh	75.6	51.0	-32.5	12250	1594	1297	172

Table23.1: Status of Potato cultivation, before and after war.

Province	District	Hectares in 1978	Hectares in 1996	% increase / decrease	Average yield (Kg / ha)	Average sale price (Afs / Kg)	Average gross income per ha (US $)	Average gross income in comparison to wheat (base = 100)
Uruzgan	Choreh	27.2	48.6	78.7	6090	2779	1124	253
Parwan	Bagram	32.4	48.2	48.8	26425	3792	6656	628
Logar	Charkh	22.8	45.2	98.2	31745	2217	4675	899
Baghlan	Anderab	48.0	41.6	-13.3	15085	1362	1365	569
Paktika	Sharan	17.0	27.6	62.4	10150	2657	1791	437
Nangarhar	Sherzad	8.0	21.8	172.5	11060	2866	2105	288
Helmand	Naw Zad	12.8	20.4	59.4	1890	4314	542	144
Samangan	Smanagan	17.4	19.2	10.3	7665	2667	1358	504
Qandahar	Panjwai	12.2	18.4	50.8	5145	3490	1193	368
Balkh	Nahr-e Shahi	18.8	16.6	-11.7	5950	2071	818	283
Kunar	Khas Kunar	8.2	13.8	68.3	13580	1920	1732	376
Uruzgan	Deh Rawod	0.4	11.2	2700.0	8995	1938	1158	133
Farah	Anar Dara	0.0	10.0	1000.0	12250	1714	1395	664
Nangarhar	Khogiani	3.4	9.4	176.5	19635	2445	3189	476
Nangarhar	Hesarak	5.2	8.0	53.8	4655	1918	593	116
Faryab	Shirin Taqab	4.0	7.0	75.0	14875	1768	1747	712
Kunduz	Imam Sahib	0.0	6.0	600.0	10395	2333	1611	454
Paktia	Nadir Shah Kot	4.2	5.6	33.3	21945	2636	3842	699
Balkh	Balkh center	2.8	5.0	78.6	8750	2500	1453	310
Zabul	Mizan	4.0	4.0	0.0	24500	2143	3487	820
Kunar	Chawkai	1.0	3.8	280.0	4760	3018	954	225
Kunar	Nur Gul	4.0	3.6	-10.0	7000	2286	1063	263
Qandahar	Shah Wali Kot	1.0	3.0	200.0	10920	2286	1658	395
Nangarhar	Sorkh Rod	1.2	1.6	33.3	16905	2286	2567	590
Paktia	Mandozai	1.0	1.4	40.0	14280	1821	1727	398
Badghis	Murghab	1.0	1.2	20.0	9625	1179	754	256
Kapisa	Tagab	1.4	0.4	-71.4	5040	1845	618	180
Parwan	Ghorband	0.0	0.0	0.0	0	0	0	0
Kunduz	Char Dara	0.0	0.0	0.0	0	0	0	0
Samangan	Khulm	0.0	0.0	0.0	0	0	0	0
Balkh	Dehdadi	0.0	0.0	0.0	0	0	0	0
Balkh	Sholgara	0.0	0.0	0.0	0	0	0	0
Jawzjan	Aqcha	0.0	0.0	0.0	0	0	0	0
Faryab	Pashtun Kot	0.0	0.0	0.0	0	0	0	0
Faryab	Almar	0.0	0.0	0.0	0	0	0	0
Farah	Bala Buluk	0.0	0.0	0.0	0	0	0	0
Nimroz	Khash Rod	0.0	0.0	0.0	0	0	0	0
Helmand	Nahr-e Saraj	0.0	0.0	0.0	0	0	0	0
Qandahar	Dand	0.0	0.0	0.0	0	0	0	0
Total		5123.4	9138.4	78.4				

Table23.2: Status of Melon cultivation, before and after war.

Province	District	Hectares in 1978	Hectares in 1996	% increase / decrease	Average yield (Kg / ha)	Average sale price (Afs / Kg)	Average gross income per ha (US $)	Average gross income in comparison to wheat (base = 100)
Jawzjan	Aqcha	8326.6	12544.8	50.7	10290	437	299	107
Faryab	Shirin Taqab	2333.0	3047.0	30.6	13510	702	630	257
Jawzjan	Sang Charak	2287.0	2794.8	22.2	7035	392	183	103
Faryab	Pashtun Kot	1254.8	1828.0	45.7	10150	535	361	95
Badghis	Qadis	1465.2	1627.0	11.0	16835	1840	2058	527
Takhar	Rustaq	524.4	1062.0	102.5	2625	570	99	65
Kunduz	Imam Sahib	2639.6	900.4	-65.9	19005	486	614	173
Kunduz	Char Dara	1946.0	862.4	-55.7	16870	439	492	144
Herat	Pashtun Zarghun	202.2	668.4	230.6	16800	2137	2385	645
Faryab	Almar	415.6	545.0	31.1	16625	956	1056	251
Badghis	Murghab	372.8	428.2	14.9	15085	425	426	144
Badakhshan	Keshem	266.6	348.8	30.8	8330	637	352	296
Samangan	Smanagan	262.2	323.6	23.4	6755	1350	606	224
Balkh	Sholgara	192.4	213.2	10.8	11095	614	452	142
Helmand	Nahr-e Saraj	86.0	193.0	124.4	10465	847	589	106
Baghlan	Nahrin	145.0	179.0	23.4	13825	730	670	223
Badakhshan	Jurm	82.0	176.4	115.1	4550	1088	329	105
Herat	Obeh	103.6	175.4	69.3	15750	1271	1330	386
Balkh	Dehdadi	154.0	149.6	-2.9	16695	822	912	161
Samangan	Khulm	173.4	138.2	-20.3	9555	1148	729	218
Baghlan	Pul-e Khumri	174.6	97.6	-44.1	17395	599	692	234
Ghor	Taiwara	30.4	97.2	219.7	5320	1654	584	156
Qandahar	Panjwai	50.2	85.6	70.5	8820	1256	736	226
Balkh	Nahr-e Shahi	730.4	74.4	-89.8	22015	629	920	317
Ghor	Saghar	23.0	62.6	172.2	3010	1857	371	123
Takhar	Farkhar	49.0	57.0	16.3	10815	477	343	117
Bamyan	Saighan	37.0	41.2	11.4	10500	1000	697	111
Helmand	Naw Zad	22.0	40.0	81.8	6265	1391	579	155
Balkh	Balkh center	26.8	38.0	41.8	15855	539	568	121
Uruzgan	Khas Uruzgan	21.2	33.8	59.4	6790	1040	469	177
Zabul	Shah Jui	26.0	31.8	22.3	14245	1403	1328	288
Bamyan	Kahmard	22.8	30.0	31.6	10710	1405	1000	202
Farah	Anar Dara	0.0	28.4	2840.0	7000	1000	465	221
Uruzgan	Choreh	19.2	25.6	33.3	6615	3410	1498	337
Ghazni	Qarabagh	14.2	14.0	-1.4	8050	2171	1161	483
Herat	Enjil	6.0	12.8	113.3	21000	2743	3826	736
Baghlan	Anderab	30.0	11.0	-63.3	19425	500	645	269
Badakhshan	Baharak	5.8	9.2	58.6	4970	1047	346	67
Uruzgan	Deh Rawod	4.0	6.2	55.0	7455	1771	877	100
Nangarhar	Behsud	2.8	6.0	114.3	17710	778	915	286
Kunar	Nur Gul	3.2	6.0	87.5	9275	1371	845	209

Table23.2: Status of Melon cultivation, before and after war.

Province	District	Hectares in 1978	Hectares in 1996	% increase / decrease	Average yield (Kg / ha)	Average sale price (Afs / Kg)	Average gross income per ha (US $)	Average gross income in comparison to wheat (base = 100)
Nangarhar	Hesarak	1.2	4.4	266.7	22750	429	648	126
Herat	Gozara	1.6	1.6	0.0	11830	1679	1319	178
Logar	Baraki	0.0	0.8	80.0	22155	1857	2733	365
Qandahar	Dand	0.6	0.8	33.3	10990	903	659	203
Kabul	Bagrami	0.0	0.0	0.0	0	0	0	0
Kabul	Shakar Dara	0.0	0.0	0.0	0	0	0	0
Kabul	Mir Bacha Kot	0.0	0.0	0.0	0	0	0	0
Kabul	Qarabagh	0.0	0.0	0.0	0	0	0	0
Kapisa	Tagab	0.0	0.0	0.0	0	0	0	0
Kapisa	Nijrab	0.0	0.0	0.0	0	0	0	0
Parwan	Ghorband	0.0	0.0	0.0	0	0	0	0
Parwan	Bagram	0.0	0.0	0.0	0	0	0	0
Wardak	Nirkh	0.0	0.0	0.0	0	0	0	0
Wardak	Chak	0.0	0.0	0.0	0	0	0	0
Wardak	Sayedabad	0.0	0.0	0.0	0	0	0	0
Logar	Khoshi	0.0	0.0	0.0	0	0	0	0
Logar	Charkh	0.0	0.0	0.0	0	0	0	0
Logar	Muhammad Agha	0.0	0.0	0.0	0	0	0	0
Ghazni	Jaghuri	0.0	0.0	0.0	0	0	0	0
Paktika	Sharan	0.0	0.0	0.0	0	0	0	0
Paktika	Urgun	0.0	0.0	0.0	0	0	0	0
Paktia	Mandozai	0.0	0.0	0.0	0	0	0	0
Paktia	Nadir Shah Kot	0.0	0.0	0.0	0	0	0	0
Paktia	Zurmat	0.0	0.0	0.0	0	0	0	0
Nangarhar	Sorkh Rod	0.0	0.0	0.0	0	0	0	0
Nangarhar	Khogiani	0.0	0.0	0.0	0	0	0	0
Nangarhar	Sherzad	0.0	0.0	0.0	0	0	0	0
Laghman	Mehtarlam	0.0	0.0	0.0	0	0	0	0
Laghman	Qaraghayi	0.0	0.0	0.0	0	0	0	0
Laghman	Alingar	0.0	0.0	0.0	0	0	0	0
Kunar	Khas Kunar	0.0	0.0	0.0	0	0	0	0
Kunar	Chawkai	0.0	0.0	0.0	0	0	0	0
Farah	Bala Buluk	0.0	0.0	0.0	0	0	0	0
Nimroz	Khash Rod	0.0	0.0	0.0	0	0	0	0
Qandahar	Arghandab	0.0	0.0	0.0	0	0	0	0
Qandahar	Shah Wali Kot	0.0	0.0	0.0	0	0	0	0
Zabul	Mizan	0.0	0.0	0.0	0	0	0	0
Zabul	Arghandab	0.0	0.0	0.0	0	0	0	0
Total		24534.4	29021.2	18.3				

Table23.3: Status of Water melon cultivation, before and after war.

Province	District	Hectares in 1978	Hectares in 1996	% increase / decrease	Average yield (Kg / ha)	Average sale price (Afs / Kg)	Average gross income per ha (US $)	Average gross income in comparison to wheat (base = 100)
Faryab	Shirin Taqab	1847.2	2426.2	31.3	15155	657	661	269
Faryab	Pashtun Kot	1452.0	2201.0	51.6	12705	661	558	147
Jawzjan	Sang Charak	1658.6	2086.2	25.8	9800	293	191	106
Badghis	Qadis	1061.8	1223.2	15.2	20335	1683	2273	583
Takhar	Rustaq	530.4	1004.4	89.4	3010	288	58	35
Faryab	Almar	441.0	570.2	29.3	17185	847	967	230
Kunduz	Imam Sahib	1497.2	496.8	-66.8	18760	552	688	193
Herat	Pashtun Zarghun	178.6	488.4	173.5	16765	1681	1872	505
Badghis	Murghab	389.0	459.0	18.0	15820	278	292	98
Jawzjan	Aqcha	372.0	428.0	15.1	8260	370	203	73
Baghlan	Nahrin	179.4	247.2	37.8	7735	547	281	93
Badakhshan	Keshem	174.6	233.4	33.7	8820	548	321	267
Qandahar	Arghandab	92.0	173.0	88.0	10920	616	447	59
Badakhshan	Jurm	83.0	151.6	82.7	3185	918	194	62
Samangan	Smanagan	95.8	129.4	35.1	7595	1176	593	220
Balkh	Sholgara	139.8	129.2	-7.6	10570	833	585	183
Balkh	Dehdadi	124.2	126.0	1.4	18095	726	873	154
Qandahar	Dand	58.0	93.4	61.0	10850	902	650	200
Helmand	Nahr-e Saraj	63.4	83.2	31.2	10465	727	505	91
Uruzgan	Deh Rawod	55.6	82.0	47.5	14630	844	820	94
Ghazni	Qarabagh	79.0	80.8	2.3	13580	1298	1171	488
Takhar	Farkhar	53.0	79.6	50.2	10430	461	319	108
Kunduz	Char Dara	283.6	72.8	-74.3	17115	428	487	143
Herat	Obeh	86.2	70.0	-18.8	15365	1286	1312	380
Helmand	Naw Zad	31.2	58.4	87.2	5985	822	327	87
Zabul	Shah Jui	32.2	45.2	40.4	15295	1038	1055	229
Baghlan	Pul-e Khumri	79.6	44.0	-44.7	15575	598	619	210
Laghman	Mehtarlam	18.6	36.4	95.7	25165	564	943	232
Nangarhar	Behsud	8.8	33.4	279.5	31990	726	1543	483
Uruzgan	Khas Uruzgan	18.6	31.2	67.7	7000	679	316	119
Farah	Anar Dara	0.0	30.4	3040.0	7000	1000	465	221
Zabul	Arghandab	15.0	26.0	73.3	5495	976	356	87
Uruzgan	Choreh	19.2	25.6	33.3	8365	1964	1091	245
Qandahar	Panjwai	17.8	25.0	40.4	9660	1404	901	277
Balkh	Nahr-e Shahi	92.8	24.6	-73.5	19775	486	638	221
Baghlan	Anderab	32.4	24.0	-25.9	13930	476	440	183
Ghor	Saghar	8.0	23.6	195.0	2800	1771	329	110
Bamyan	Saighan	24.0	23.0	-4.2	10605	1048	738	118
Paktia	Zurmat	35.4	21.4	-39.5	13685	1471	1337	272
Balkh	Balkh center	14.2	18.8	32.4	14280	466	442	94
Logar	Baraki	2.4	15.8	558.3	28175	1810	3387	451

Table23.3: Status of Water melon cultivation, before and after war.

Province	District	Hectares in 1978	Hectares in 1996	% increase / decrease	Average yield (Kg / ha)	Average sale price (Afs / Kg)	Average gross income per ha (US $)	Average gross income in comparison to wheat (base = 100)
Bamyan	Kahmard	7.6	12.0	57.9	9870	1091	715	144
Samangan	Khulm	10.8	10.2	-5.6	8890	1134	670	200
Paktika	Sharan	7.4	9.8	32.4	25095	1455	2425	591
Laghman	Alingar	3.2	8.6	168.8	17745	1000	1179	236
Kunar	Nur Gul	3.2	8.2	156.3	8050	800	428	106
Qandahar	Shah Wali Kot	3.4	4.6	35.3	10955	929	676	161
Badakhshan	Baharak	3.4	3.8	11.8	4340	948	273	53
Herat	Gozara	3.8	3.8	0.0	11095	1310	965	130
Kabul	Bagrami	4.6	2.4	-47.8	17325	714	822	231
Laghman	Qaraghayi	1.6	2.0	25.0	11935	598	474	125
Herat	Enjil	0.4	0.8	100.0	17500	2054	2388	459
Ghor	Taiwara	0.2	0.8	300.0	6405	1238	527	140
Kabul	Shakar Dara	0.0	0.0	0.0	0	0	0	0
Kabul	Mir Bacha Kot	0.0	0.0	0.0	0	0	0	0
Kabul	Qarabagh	0.0	0.0	0.0	0	0	0	0
Kapisa	Tagab	0.0	0.0	0.0	0	0	0	0
Kapisa	Nijrab	0.0	0.0	0.0	0	0	0	0
Parwan	Ghorband	0.0	0.0	0.0	0	0	0	0
Parwan	Bagram	0.0	0.0	0.0	0	0	0	0
Wardak	Nirkh	0.0	0.0	0.0	0	0	0	0
Wardak	Chak	0.0	0.0	0.0	0	0	0	0
Wardak	Sayedabad	0.0	0.0	0.0	0	0	0	0
Logar	Khoshi	0.0	0.0	0.0	0	0	0	0
Logar	Charkh	0.0	0.0	0.0	0	0	0	0
Logar	Muhammad Agha	0.0	0.0	0.0	0	0	0	0
Ghazni	Jaghuri	0.0	0.0	0.0	0	0	0	0
Paktika	Urgun	0.0	0.0	0.0	0	0	0	0
Paktia	Mandozai	0.0	0.0	0.0	0	0	0	0
Paktia	Nadir Shah Kot	0.0	0.0	0.0	0	0	0	0
Nangarhar	Sorkh Rod	0.0	0.0	0.0	0	0	0	0
Nangarhar	Hesarak	0.0	0.0	0.0	0	0	0	0
Nangarhar	Khogiani	0.0	0.0	0.0	0	0	0	0
Nangarhar	Sherzad	0.0	0.0	0.0	0	0	0	0
Kunar	Khas Kunar	0.0	0.0	0.0	0	0	0	0
Kunar	Chawkai	0.0	0.0	0.0	0	0	0	0
Farah	Bala Buluk	0.0	0.0	0.0	0	0	0	0
Nimroz	Khash Rod	0.0	0.0	0.0	0	0	0	0
Zabul	Mizan	0.0	0.0	0.0	0	0	0	0
Total		11495.2	13708.8	19.3				

CHAPTER 2: RESULTS AND FINDINGS BY SUBJECT

2.1. Demography and Family Status

To assess the current status and evolution of demography and family status in order to evaluate programme development requirements in relation to food security.

Main findings:

A total number of **7,003 villages** have been surveyed out from a total number of **79 districts.** Each province was represented with at least one district. An **average increase of 24.6% in the number of families between 1978 and 1996** has been reported with an average number of about **9 persons per family**.

While the rehabilitation of rural family structures generally coincides with higher birth rates and a rapid increase of population it is also frequent to observe that land remains undivided between several family members living together in community. This phenomenon is therefore largely contributing to increase the total number of family members living in the same household / on same farm holding.

It is also observed that contrary to average results some districts are showing some decrease in the number of families. Generally these cases occurred where there was a front line or continuous fighting in the area at the time of the survey or in case of severe destruction of infrastructures (houses, irrigation networks, etc.) and mined fields preventing or discouraging refugees or Internally Displaced Persons to return.

The **number of families headed by widows was also reported at up to 11.2% on the average** throughout the 79 surveyed districts with a **maximum up to 54%** in Dand district of Kandahar province. (Also see Appendix I - Table 1).



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Food Security through Sustainable Crop Production in Afghanistan

TECHNICAL REPORT

RESULTS AND FINDINGS OF HORTICULTURAL FIELD SURVEY IN SEVENTY-NINE DISTRICTS OF AFGHANISTAN



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FOOD SECURITY THROUGH SUSTAINABLE CROP PRODUCTION

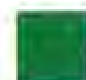
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LEGEND

HORTICULTURAL FIELD SURVEY IN SEVENTY NINE DISTRICTS OF AFGHANISTAN

 Horticultural Field Surveyed Districts

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We would like to express our most sincere gratitude to all organizations and individuals who contributed to the implementation of this horticultural field survey in Afghanistan.

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* Islamic Relief Agency
* Mercy Corps International
* Agency Coordinating Body for Afghan Relief

who collaborated in the huge task of collecting field data in more than 7000 villages throughout Afghanistan in spite of sometime very difficult working conditions.

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Most sincere thanks are of course also addressed to village communities who received survey enumerators and answered their questions with spontaneity and accuracy, thus demonstrating once again their interest and enthusiasm for promoting the development of horticultural crops in the country.

Hans C. Brink
Programme Manager
AFG/96/004

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